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LONDON SATURDAY AUGUST 21 1943

WAR SURGERY IN THE MIDDLE EAST

BY

R. K. DEBENHAM, O.B.E., M.D., F.R.C.S.

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During the last nine months of 1942 3,279 battle casualties were brought to a military hospital on the lines of communication in the Middle East. All types of casualties were seen, under various and changing conditions, as a result of three different battles.

First, during April and May some 300 battle casualties, including a large proportion of severely ill patients, were received from Tobruk by sea. They had already had hospital treatment, and had been held at Tobruk until fit to travel. Suppurating wounds of all types were seen; battle wounds do not heal by first intention. Secondly, during the month of July alone, 2,287 battle casualties were received from the first battle of El Alamein. They arrived from 12 to 48 hours after being wounded, and the great majority had received no treatment other than the application of the first field dressing. The hospital, in fact, worked as a C.C.S., and continued to do so during the following two months. Thirdly, during the second battle of El Alamein, at the end of October, the conditions were again different, and in two weeks about 500 battle casualties were received, mostly from 36 to 48 hours after being wounded. The particular characteristic of this group was that they were selected cases, and for the most part comprised seriously wounded men who were not fit enough for a long journey and who had already received treatment.

These three periods have been particularly instructive, and an attempt is made below to summarize the main features of this diverse group of casualties occurring in men of different colour, different race, and different language. Before dealing with the casualties themselves, a few words about adapting a base hospital to function as a C.C.S. are not out of place.

Hospital Acting as a C.C.S.

As a result of the enemy's rapid advance to El Alamein and the battle that followed, convoys of 100 to 500 men began to arrive daily at the hospital, which now acted as a C.C.S. Convoys almost invariably arrived in the evenings; and an evacuation took place the following morning. The entrance and exit were made as easy as possible, and one-way traffic was helpful. Stretcher-bearers became very tired with much carrying, and as many wheeled stretchers as possible were pressed into service.

TABLE I.—*Showing Region of Body hit in 2,287* Casualties from the First Battle of El Alamein in July, 1942*

	Cases	Lesions		Cases	Lesions
Scalp and head ..	168	176	Genitals	4	6
Neck	36	37	Burns	91	130
Face and jaw (not M.-F.U.)	44	45	Blast	23	23
Chest	105	110	Mult. abrasions ..	30	30
Eyes	20	22	Fractures:		
Ears	11	11	Humerus ..	21	21
Spine	8	8	Forearm ..	7	7
Abdomen	32	32	Pelvis	8	8
Trunk	221	231	Femur	19	19
Limbs:			Tibia	22	26
Miscellaneous ..	735	780	Carpus and hand	17	18
Elbow	27	29	Tarsus and foot ..	12	12
Knee	89	90	Others	3	3
Ankle and foot ..	123	128	Multiple S.W. ..	72	72
Hand	236	240	Clavicle	6	6
Buttocks	97	104	Total ..	2,287	2,394

* Excluding 57 casualties admitted to the facio-maxillary unit.

At first sight one may imagine that a convoy from a battle consists exclusively of wounded men. This is not so. Out of 7,952 troops who arrived at the hospital during the heavy fighting of July, only 2,287 were battle casualties. Table I shows the parts of the body which were hit. The remaining 5,665 consisted of cases medically sick (especially enteritis and malaria), also an assortment of skin conditions, superficial suppurative lesions, piles, sore feet, cases of anxiety neurosis, and the counterpart in less-educated troops—viz., self-inflicted wounds. All these cases had to be rapidly sorted out. The surgical cases were divided into major and minor, which when stairs had to be surmounted often became synonymous with lying and walking. After admission a large reception ward was invaluable. A surgeon or an experienced medical officer with a sound knowledge of surgery acted as sorter, and decided what was necessary for each case. He was assisted by the transfusion officer, who treated shocked patients. A drink of tea was provided as soon as possible and antitetanic serum and morphine were given as required. Cases were written up by the sorting officer for theatre, *x* ray, or both. Coloured indicators placed at the end of the bed were a great help. These coloured tabs or bands were useful for theatre (blue), *x* ray (pink), special priority (blue with red cross), and operation completed (red). It is most important that surgery in a shocked patient should be done as soon as the shock has been adequately treated, otherwise his condition will deteriorate again.

A common source of delay in the theatre was waiting for patients. This can be avoided by having an adequate number of stretcher-bearers, and one intelligent orderly in charge of movement control. It is his job to see that there are always patients ready waiting in the anteroom to be taken into the theatre as soon as required. The operating surgeons often saw the patient for the first time in the anteroom, together with the wet *x*-ray film and report. The number of operations that can usefully be carried on at one time depends not only on the number of surgeons available but on anaesthetists, theatre staff, instruments, etc. Two surgeons working at two tables all night from 9 p.m. to 9 a.m. usually managed 50 cases between them, and during the month of July 1,004 cases went through the theatre. Much time is saved in minor cases by placing the patient and the stretcher on the operating table; this avoids much moving about. A table laid out with sterile instruments on the cafeteria system is also useful; each operating table can then be fed with the necessary tools as required.

For the usual type of wound only the minimum of instruments is necessary, since so much of the treatment depends on proper cleaning up and proper immobilization, and not on heroic cutting. Much of the value of good work is lost if concise notes are not written on the field medical card at the end of the operation. A convoy will be going out in the morning, and most patients should be written up for evacuation as soon as the operation is completed. Under these circum-

stances it is easy to see why no plasters should be skin-tight unless they are also split. A skin-tight plaster is only permissible if the surgeon who has applied it can keep it under his personal observation for a few days, and in busy periods this is out of the question. With a quick turnover all sorts of points need attention. For instance, at the end of the first night's operating we were left with a bowl full of false teeth: fortunately the owners were found before the convoy was dispatched. Incidentally, don't put dentures in dettol; they are out of sight and may get lost.

The Wounds in General

It is a point of cardinal importance that all wounds dealt with have been a result of fighting in dry sandy desert. The problem is quite different from that presented in the last war, in Flanders, where surgeons had to contend with highly manured wet mud. Secondly, the amount of clothing worn was very small, and only rarely was clothing found in a wound. Thirdly, sulphanilamide was used either by mouth or locally in the wound, or both, and this apparently greatly prolongs the time which may be allowed to elapse between wounding and surgical intervention. Prophylactic sulphanilamide technique in the Middle East has now been standardized as follows: Locally, 10 g. into the wound and another 10 g. after operation; by mouth, 5 tablets (2.5 g.) at 6 a.m. and 6 p.m. daily for 4 days. The dosage is printed on a ration card label, and is ticked off as given. The method is simple and works well. The greatest number of wounds were caused by fragments of H.E. shell, mine, grenade, or bomb.

Flesh Wounds

By far the largest number of wounds were minor flesh wounds. Patients arrived in July with the first field dressing applied, and a very good dressing it is. Treatment consists primarily in minimizing the infection, and to this end thorough cleansing of the surrounding skin is important, and if facilities permit it is well worth while to spend some time in cleaning the skin with soap and water and shaving off the hairs. Shaving in itself is a very good mechanical way of cleaning. Wide excision has not been found necessary, and a trim is adequate, usually combined with incision of the skin and deep fascia at each end of the wound to assist drainage. A Spencer Wells forceps or a finger is inserted along the track before this has closed up, and in a large number of cases the missile is easily located and removed. A preliminary radiograph shows whether removal of the foreign body is indicated or not. No prolonged search is justifiable. To allow adequate drainage the size of the external wound should bear a definite relation to the depth of the wound. Dead or damaged tissue should be removed even up to 48 hours after wounding. Treatment by trimming merges into establishing adequate drainage.

Sometimes a large wound at the front of the thigh, with a missile lodged in the posterior compartment, is well treated by making a counter-incision posteriorly to allow drainage and prevent the formation of a haematoma. I saw one case of profound toxaemia from gas infection which had developed in a large haematoma of the thigh and had spread to the surrounding muscles. A counter-drain posteriorly and removal of the large fragment would have prevented it. Adequate drainage combined with the usual general treatment cured the patient. Extensive operations for flesh wounds have been unnecessary and meddlesome. Sulphanilamide powder, and plenty of it, is placed in or blown into the wound, and rubbed into a paste with the finger. Enough dressing of gauze and wool should be applied to absorb all discharge. One hopes that the next dressing will not be done too soon, for repeated dressings are not only useless but harmful. One of the values of a plaster cast is that the wound will not be disturbed after proper treatment. Careful immobilization with plaster slabs or casts is of the very greatest value.

Fascia comes into its own in wartime; it determines the spread of infection. Sometimes a tense swollen thigh, due to a haematoma, requires decompression by longitudinal incision of the fascia lata and evacuation of the clot. The same thing occurs in the forearm: for example, an Indian soldier had a clean through-and-through bullet wound of the forearm; the track passed right through between the two bones; the forearm was tense and swollen, the radial pulse obliterated, and the fingers cold. A long incision was made through the tight constricting fascia. The space was thus decompressed and the circulation re-established.

In war wounds no sutures should be used, and no packing unless it is necessary to control haemorrhage. Drainage-tubes are quite unnecessary, and in one case at least caused severe secondary haemorrhage from pressure on the popliteal artery. The best initial drainage is obtained by a good honest hole through skin and fascia. A transverse cut across the fascia lata is often useful in addition to the usual longitudinal incision. Either the wound can be left widely open or a piece of rubber glove or a strip of vaselined gauze may be laid in the wound to keep it open. It is essential to see that the drain does not act as a cork and so prevent instead of assisting drainage.

Fractures

In forward areas another part of the body is often the only splint available: e.g., one leg is tied to the other, an arm is bandaged to the side; morphine gr. 1/4 to 1/2 completes the splinting. For fractures of the femur and wounds in and around the knee-joint the "Tobruk" plaster is excellent. Strapping extension is applied to the skin below the knee. Elastoplast extension strapping is much better than the ordinary strapping. It is kept in place by a bandage from above downwards. A posterior plaster slab is applied from mid-thigh to beyond the toes. A pad behind the heel prevents pressure sores, and a pad behind the knee gives comfort. A Thomas splint is applied and strapping extension (2 cords) is tied over the end. The splints supplied always have rings which are too big for the average limb, in order that they may be used for all sizes of patients; it is therefore necessary to push a large pad of wool, or the patient's underclothing, between the ring and the great trochanter to make the ring fit snugly. The pad is kept in place by a bandage; this is most important because pads have a tendency to shift during transportation. Finally a pad is placed in front of the knee and one or two plaster bandages are applied over the whole leg and splint to keep the apparatus firm. The site of the wound and fracture is drawn on the plaster with a copying-pencil; the surgeon initials it and records the date. If the plaster is a temporary one for transport only, and the wound has not received attention, this fact should be indicated in large letters on the plaster.

For wounds of the leg with fracture of the tibia and fibula an ordinary plaster is applied, mid-thigh to beyond the toes, with a pad behind the heel. It must be either split or padded anteriorly. If the plaster is to be split it is a great convenience to place a long piece of 1/2-in. rubber tubing smeared with vaseline on the antero-external (fleshy) part of the leg before applying the circumferential plaster bandages. It is pulled out after the plaster has set, leaving a gutter along which the cast can be easily cut with shears. Alternatively a strip of linoleum can be used, and a sharp knife to cut down on it, but the tubing is simpler. In cases complicated by nerve lesions special care is needed to avoid pressure sores.

For wounds of the arm with fracture of the humerus a Böhler "U" with padding over the shoulder and over the internal epicondyle is excellent. A collar-and-cuff bandage is applied and the upper arm fixed to the side with one or two flannelette or preferably plaster bandages round the chest wall. Fractures of the forearm are conveniently treated with anterior and posterior plaster slabs, from mid-humerus to knuckles, and kept in place by ordinary cotton bandage. A sling is necessary.

Head Wounds

A common injury is a small penetrating wound of the head just under the side of the helmet. The patient may feel and look well, the wound may appear small and be readily missed, yet a fragment of shell may be lodged in the brain. A radiograph shows the hole in the skull, usually less than 1/2 in. in diameter, with comet-like fragments of bone passing inwards. Treatment is essentially that of trying to get the wound to heal by first intention and so prevent escape of C.S.F. and the onset of meningitis. After thorough shaving, the wound is narrowly excised and enlarged at either end in a linear manner. The mastoid self-retaining retractor is most useful to get a view of the hole. Loose fragments of bone are

removed. It is often impossible to close the dura. On but four occasions (out of about 25 penetrating wounds) was the foreign body removed, and then only when it was easily accessible near the surface. The wound is powdered with sulphanilamide and the scalp is closed in two layers, preferably with fine silk sutures; a small glove drain is inserted through the stab wound, or through the extremity of the incision, to drain the subaponeurotic space. When transport was available patients were evacuated to the head centre. The good blood supply and consequent good healing properties of the scalp must have saved many lives, and several of these patients have now returned to duty.

Neck Wounds

It was remarkable how important structures in the neck apparently escaped injury. One patient sustained a wound of the oesophagus. Gastrostomy saved his life. Another had a wound perforating the carotid artery and jugular vein. He developed a traumatic false aneurysm (pulsating haematoma) which gradually enlarged and displaced the trachea to the opposite side. It was left as long as possible before any surgery was attempted, to allow the collateral circulation to establish itself. Finally surgery became imperative owing to pressure on the trachea. Under intratracheal anaesthesia, and with a pre-operative blood drip transfusion, the haematoma was opened, the proximal and distal ends of the common carotid artery compressed, and the rent in the artery and vein were easily seen. Both were ligatured. Unfortunately the patient developed severe pneumonia and had to be propped up in bed. Complete hemiplegia (probably due to thrombosis) developed 48 hours after operation; however, the hemiplegia cleared up and the patient recovered completely.

In one case of perforating wound of the neck the cervical sympathetic cord was involved, as shown by a typical Horner's syndrome; the patient was otherwise quite well.

Chest Wounds

Among the 500 battle casualties from the second battle of El Alamein, 65 suffered from wounds penetrating the pleural cavity. Contrary to what one would expect, these patients travelled very well. Remarkably little surgery was required after arrival at hospital, certainly in the early stages. Two cases were taken to the theatre for the arrest of haemorrhage, and one for closing a sucking wound. Most of the small sucking wounds were well treated by a vaselined gauze pad to close the wound, and a piece of elastoplast or a few silkworm-gut sutures to keep it in place. The treatment required was almost entirely medical, and was carried out by the medical specialist. Patients were propped up, and in many cases the haemothorax required aspirating on one or more occasions. A few developed empyemata, which were drained by closed under-water intercostal drainage. When fit to travel they were transferred to the chest centre, under the care of Major Logan, R.A.M.C., who tells me that all the patients did well except one who died of poliomyelitis. Further surgery was required in several cases, either for draining pus or for removal of foreign bodies when the sepsis had settled down.

Abdominal Cases

Of the 300 cases received from Tobruk 3 had injuries perforating the bowel (one died). Of 2,287 casualties from the first battle of El Alamein 8 received perforating wounds of the gut (3 died).

Among the 500 casualties from the second battle of El Alamein there were 30 perforating thoraco-abdominal or abdominal wounds, including one extensive wound of the sacrum, in which perforation of the rectum had been suspected and colostomy performed. Although in fact the rectum had not been perforated, the colostomy proved valuable in that it saved the large sacral wound from faecal contamination. Twenty-three patients were operated on in forward areas, and 3 in the hospital (see Table II). They can be divided into four groups:

(1) Thoraco-abdominal wounds, of which there were 11, with a mortality of 10. These figures bear out the very serious nature of this type of wound.

(2) Penetrating abdominal wounds with perforation of the bowel, of which there were 11, with a mortality of 2.

TABLE II

Case	Wound	Other Wounds	Hours before Operation	Abdominal Injuries	Operation	Result
1	Abdomino-thoracic	—	48	Spleen; stomach	Splenectomy; stomach sutured	Died 3rd day
2	,,	—	72	Spleen; kidney; colon perforated	Splenectomy; nephrectomy	Died 4th day
3	,,	+	56	Upper gut, retroperitoneal; pancreas	Drainage	Died 17th day
4	,,	—	—	Liver	Nil	Died 3rd day
5	,,	++	18	Stomach	Sutured	Died 17th day
6	,,	—	35	Liver	Laparotomy	Died 6th day
7	,,	—	5½	Stomach; spleen	Sutured	Died 7th day
8	,,	—	—	Liver	Subdiaphragmatic abscess; drained 13th day	Died 14th day
9	,,	+	—	Diaphragmatic hernia; stomach in left pleural cavity	Nil	Died 9th day
10	,,	—	—	No abdominal symptoms or signs; severe chest wound	Nil. P.M. showed perforated diaphragm. No gut injury	Died 21st day
11	,,	+	10	Stomach and small intestine	Sutured	Recovered
12	Penetrating abdominal	—	7	Small intestine; right kidney	Gut sutured	Died 13th day; sepsis
13	,,	—	7	3 small intestine; 2 sigmoid perforated	S.I. sutured; sigmoid exteriorized	Died 10th day; chest and jaundice
14	,,	—	17	Stomach; transverse colon (mult.)	Stomach sutured; colon exteriorized	Recovered
15	,,	—	9½	Upper small intestine (9 perforated)	Sutured	,,
16	,,	—	?	Ileum (6 perforated)	,,	,,
17	,,	+	9	Jejunum and ileum (7 perforated)	,,	,,
18	,,	+	8½	Mult. perforations jejunum; 3 perforations ileum	Jejunum resected 9 in.; ileum sutured	,,
19	,,	—	4½	4 perforations lower ileum; 2 caecum	Ileum sutured; caecostomy	,,
20	,,	—	40	1 small intestine; 1 sigmoid	S.I. sutured; sigmoid exteriorized	,,
21	,,	+	5	Ascending colon destroyed	Resection ascending colon; ileocolostomy	,,
22	,,	+	Under 10	Perforated pelvic colon	Exteriorized	,,
23	,,	(+)	9	Contusion of small intestine	Laparotomy	,,
24	,,	—	12	Haemoperitoneum	,,	,,
25	,,	—	36	,,	,,	,,
26	,,	—	24	Retroperitoneal haemorrhage in pelvis	,,	,,
27	,,	(+)	7½	Gross protrusion of small intestine	Laparotomy; gut replaced; faecal fistula later	,,
28	,,	—	?	Buttock and sacral wound	Colostomy for suspected bowel injury; actually bowel intact	,,
29	,,	(+)	—	T. and T. bullet wound; R.I.F. to left loin; clinically bowel perforation	Nil	,,
30	Wound back	—	48	Wound back; foreign body anterior to L.1	Laparotomy; retroperitoneal haematoma and foreign body; haematoma and foreign body removed	Died 3rd day

(3) Other penetrating abdominal wounds without gut perforation: 7 cases, mortality 1.

(4) A single case of through-and-through bullet wound of the abdomen from right iliac fossa to left loin. Clinically, perforation of the gut must have occurred. No operation: recovery.

The most instructive cases are the 11 wounds with bowel perforation. The 9 who recovered owe their lives to 9 different surgeons who were working in forward areas. Operation had been performed as early as possible and the patients had been held in forward areas for from 5 to 16 days. Post-operative intravenous saline drip, continuous gastric suction, and sulphadiazine had been used as a routine. The sulphadiazine had usually been given intraperitoneally by catheter inserted through the wound—10 g. suspended in 50 c.cm. saline at the end of the operation, and repeated if necessary. Small-intestine perforations had been sutured (resection in one). Large-intestine perforations had been exteriorized (resection in one). The cardinal points seemed to be early operation, late evacuation, intravenous saline drip, continuous gastric suction, and sulphadiazine. All this is very difficult with mobile warfare, but was possible when the line of battle was static.

During convalescence two laparotomy wounds burst open and had to be resutured, and one patient developed secondary intestinal obstruction due to a band of adhesions which had to be divided.

Wounds of Buttock, Genito-urinary Organs, Spine

The chief point to remember about buttock wounds is that the missile may have penetrated into the pelvis, so injuring the bowel or bladder. Suppuration in the buttock is very troublesome (especially if it tracks up from a fracture of the upper end of the femur). A few huge open buttock wounds were seen. They responded well to sodium sulphate dressings (12%) and subsequently needed secondary suture or skin grafting. A wound of the buttock in association with a fractured femur is very difficult to treat, because the ring of the Thomas splint comes up against the wound. One case of this type was put in a hip spica plaster cast. This appears to be the best treatment, but the plaster soon gets sodden unless a window can be cut.

A wound of the genitals is likely to involve also the cave of Retzius, the urethra, and perhaps the bladder. The uncomplicated bladder wound does well with suprapubic drainage. One patient had received a wound of his penis, and a piece of his shorts had been driven into the wound near the base of the organ. It had been passed naturally along the urethra and was emerging, rolled up, from the external urinary meatus, from which it was easily picked out. In one instance the membranous urethra had been completely shot away, and a perineal urethra had to be established. He had control of his urine, because the internal sphincter was still functioning, though the external sphincter had been destroyed. Two cases of ureteric fistula were seen, due to wounds in the loin; and I recollect two cases in which the kidney had been removed in forward areas. A wound of the kidney alone is certainly not common.

Wounds of the spine are usually associated with complete paraplegia, and are apt to arrive during rush periods when there is little time to deal with them. In the few cases in which operation was performed it was usually found that pressure on the spinal cord was produced by bone fragments and not by the missile itself. Suprapubic cystotomy is often necessary in these cases.

Vascular Lesions; Amputation

Ligature of a main vessel with extensive damage to the limb distal to it is fraught with grave danger and usually ends with amputation. The subclavian artery was divided in one case and thrombosed in another. Amputation had to be performed through the middle of the upper arm. In the only two cases in which the popliteal artery was ligatured amputation was subsequently required in each. One case of ligature of the femoral artery in Hunter's canal subsequently required amputation, though in a few others the result was quite satisfactory. The result seems to depend to a considerable extent on the damage to the limb itself and the attendant infection; but, apart from this, the conclusion to be drawn is that ligature of the femoral artery is to be preferred to ligature of the popliteal. Ligature of the tibial vessels has been entirely satisfactory. The accompanying veins have been tied as well as the artery.

In the last group of 500 wounded there were 3 cases of traumatic (false) aneurysm—the right common carotid, the brachial, and the superficial femoral. In order to allow the collateral circulation to develop they were left alone as long as possible (3 to 5 weeks) before operation was performed. Pressure symptoms or rapid increase in size made further delay unjustifiable. At operation much clot was found in each case, and this tended to mask the pulsatile nature of the swelling, which may readily be mistaken for an abscess. In each case a direct attack was made on the aneurysm itself; the haematoma was opened and the vessels tied in the wound with satisfactory results.

Thirty-two amputations of arm or leg have been performed in the hospital—upper arm 7, forearm 3, thigh 10, below knee 12: five (2 arm, 3 leg) were for gangrene due to arterial lesions; 4 (1 arm and 3 leg) for secondary haemorrhage; 23 for gross trauma and sepsis, one of which (forearm) was for gas gangrene. The chief points concerning amputation are as follows. The limb should not be removed at the site of election, for infection is almost sure to follow. The maximum length of limb should be preserved, because secondary amputation is often necessary. Some form of flap should be fashioned, as guillotine amputation is so painful. The flaps should not be sutured. The best dressing is probably a vaselined gauze pack; sometimes one or two sutures can be inserted to hold the flap in place over the pack. In badly infected cases the flaps are sutured back to the limb itself, thus leaving the stump widely open; secondary suture can be undertaken later. A liberal quantity of sulphanilamide powder is rubbed into a paste on the stump.

Nerve Lesions and Blast Injuries

Lesions of the ulnar and musculospiral nerves are common; the median is less often involved. Musculospiral lesions were not always due to the wound itself, but sometimes due to pressure—e.g., if the limb was allowed to hang over the operating table. External popliteal lesions were also frequent, and occasionally the whole sciatic nerve was paralysed. Special care must be taken to see that plaster casts do not cause pressure sores in these cases, when the skin is insensitive. It is important to look for nerve lesions before the operation is begun.

The only common blast injury was bilateral rupture of the tympanic membrane. The ears must on no account be syringed, for this invites infection. Patients are often badly shaken after blast, but recover in a few days. Only one case of crush syndrome was seen, and this proved fatal.

Burns

The worst cases of burns came from fighting in tanks. In peacetime, tanning the burn is highly satisfactory; but this is not so in war, because the facilities for preliminary cleansing of the burns are unobtainable, and tanning a dirty burn is as harmful as suturing a dirty wound. Moreover, a tanned burn needs skilled and careful nursing, which is impossible on lines of communication. Almost all the burns seen during the period under review had been cleaned up more or less, then powdered with sulphanilamide and dressed with vaselined gauze. Patients travelled best with plenty of padding, and in the case of the limbs a light well-padded plaster-of-Paris cast was definitely beneficial. In the early stages plenty of intravenous plasma or serum is essential. After the first week or ten days the haemoconcentration disappears and secondary anaemia develops. Blood transfusions at this stage help considerably.

Cases of severe burns travel very badly even up to two weeks after burning. After a long journey they arrive toxic and ill; the tongue is dry, and this is a good indication for pushing fluids. The tongue and the pulse are the most helpful guide to the general condition. The colour is often difficult to determine because the face is involved. Where all four limbs are burnt a transfusion may be given into the sternum.

It is easy to put too much sulphanilamide powder on the burns, especially in severe cases, as sulphanilamide is readily

and quickly absorbed from burnt areas and gives rise to profound toxaemia. I have seen one patient with a blood sulphanilamide of 20 mg. per 100 c.cm., and another (fatal) case of 40 mg. entirely due to local absorption (optimum concentration 5 mg. per 100 c.cm.). These patients were very cyanosed, and showed marked dyspnoea, tachycardia, and restlessness, and later unconsciousness. There were no physical signs in the chest. Lieut.-Col. W. C. Wilson pointed out that sulphanilamide was responsible. Sulphanilamide is now kept in the theatre in little gauze bags containing 10 g. each—that is the ration per patient. When, after a long journey, a burnt patient arrives toxic and ill the worst thing to do is to dress the burn the same evening. Plenty of fluids, and morphine gr. 1/4, should be given, and the patient must be left alone to recover from the journey. The burns should be dressed before and not after evacuation, and frequent dressings are harmful. Burns of the back are difficult to treat and to move.

Nursing and General Treatment

After heavy fighting the casualties arrive dead tired, and desire nothing but sleep, and lots of it. If they are not overcome with tiredness they want plenty of tea, a good meal, a good wash, and a good sleep. Next morning the bowels need attention. Constipation is very common, perhaps owing to the lack of water in the desert; many patients had not had their bowels open for four days or a week. A No. 9 pill, followed by mag. sulph. in the morning, is the answer. Ill patients are less disturbed if an enema can be given. Many complained of sore backs, from being jolted in an ambulance. Some huge bedsores were seen in patients who were too ill for evacuation and had to be nursed in the forward areas for some days on stretchers without ring pillows. Morphine gr. 1/4 or mist. 315s (pot. brom. gr. 15, chloral hydrate gr. 15, tinct. opii gr. 15) is most useful, and certain cases of battle euphoria respond very well to luminal gr. 1/2 t.d.s. for two days. Patients did not bother much about their wounds or the loss of a limb; this is in marked contrast to the mental distress caused by an amputation due to an accident. A grenade exploding in the hand causes the most ghastly wounds; several cases have been seen. One or both hands are blown off or mutilated; the face is spattered and the sight of one or both eyes is destroyed. Life continues and the patient recovers, but without hands or sight. For multiple superficial grenade wounds of the limbs a hot soapy bath is excellent treatment if sufficiently sterile conditions are obtainable.

Transfusions.—In all, 328 pints of blood (mostly stored) and 96 pints of plasma or serum were used in the hospital during the last six months of 1942, apart from a considerable quantity of 5% glucose in N/5 saline. Transfusions were used for shock, for burns, and during convalescence when the haemoglobin fell below 60%. For shock two to four pints of blood or plasma were required; the first pint was run in quickly. Patients have been received from forward areas who have had as much as 13 pints of protein-containing fluid during the first day or two. When blood is transfused to anaemic patients with suppurating wounds stored blood has to be given slowly and used with caution, because reactions are common and in the presence of undrained pus the benefit of transfusion is quickly lost.

Gas Gangrene and Tetanus.—Gas gangrene in the true sense has been very rare, and gas infection uncommon. It developed in a badly lacerated forearm with vascular block, in a large undrained haematoma of thigh, and as a terminal event in severe infection of an amputated leg and arm. No case of tetanus has been seen.

Anaesthesia.—Pentothal has been the anaesthetic of choice, especially for short operations. It was used for induction, followed by ether when longer anaesthesia or abdominal relaxation was required. If a drip saline was being given, pentothal was injected into the rubber tubing. Ethyl chloride was also used for induction, especially when the supply of pentothal was running short. Only a very light anaesthesia is required for most cases, and the tired wounded man is easily and quickly anaesthetized.

X Rays.—When the hospital was acting as a C.C.S., a wet x-ray film and report were made available by the radiologist in most cases, and were seen in the anteroom adjoining the theatre. A radiograph was valuable for showing the presence or absence of fractures and foreign bodies. If the surgeon knows the approximate size and location of a shell fragment he can decide whether to go for it or not. No precise location by *x* rays was found necessary. The size of the external wound often gave a misleading idea of the size of the missile: a long thin fragment can make a large or small entrance wound, depending on its angle of entry. It was especially helpful to know of the presence of foreign bodies in the knee-joint, skull, spine, and chest. In wounds of the buttock or thorax, where abdominal injury was suspected clinically, a radiograph sometimes settled the matter for or against laparotomy. On one occasion the presence of gas under the diaphragm was a deciding factor.

Deaths

Table III indicates the main causes of death. Probably the figure of 1.3% is approximately accurate for most C.C.S. work. If a patient is fit enough to reach a C.C.S. his chance of recovery is excellent. The high mortality rate of 3% for the casualties from Tobruk and 10% from the second battle of El Alamein is due to the fact that seriously ill patients were sent to the hospital; this figure is far in excess of the mortality figures in most hospitals.

TABLE III.—*Mortality in Hospital*

	Head	Head and Face	Face	Neck	Spine	Chest	Thoraco-abdominal	Abdominal	Bladder and Scrotum	Trunk	Lower limbs	Multiple	Burns	Total	Percentage	Died within 1 week of wound	Lived over 1 week
300 casualties from Tobruk, including many serious cases	1		2			1		2			1		1	8	3		
2,679 casualties from 1st battle of El Alamein and subsequently when acting as a C.C.S. ..	5		1	2	2	1	1	3		2	6	9	5	37	1·3	33	4
500 casualties from 2nd battle of El Alamein; many seriously ill ..	8	4	1		3	3	10	3	1		2	12	5	52	10	35	17
Total ..	14	4	4	2	5	5	11	8	1	2	9	21	11	97			

"Don'ts"

In conclusion, a few "don'ts" may be added:

Don't suture wounds.
Don't suture amputation stumps.
Don't amputate at the site of election; go below it.
Don't use packing except to stop haemorrhage.
Don't use drainage tubing.
Don't use unpadded plasters.
Don't let a plaster dry with the heel resting on the stretcher.
Don't forget to give morphine before a long bumpy journey.
Don't forget to sling a Thomas splint on the stretcher bar.
Don't forget to give plenty of fluids by mouth.
Don't forget that the ligature of a main vessel should be prominently recorded on the field medical card and underlined. Gangrene is so dangerous.

Conclusions

The salient features of war surgery in the Middle East have been the value of organized resuscitation and local and general sulphanilamide; the importance of thorough immobilization; the adequacy of conservative surgery and wound trimming (even up to 48 hours after wounding), instead of wound excision; the dangers attendant on tension around wounds and the necessity for a good blood supply in damaged limbs; the satisfactory way in which the wounded man travels (except the abdominal cases and those with severe burns); and, finally, the need to adapt and improvise articles to fulfil functions for which they were never intended. War surgery is not difficult, but careful attention to important details is well repaid by results.

I should like to thank the commanding officer, Colonel G. B. Hadden, for permission to publish this paper, and members of the staff for help and criticism.

ACUTE LYMPHOCYTIC MENINGITIS IN "EPIDEMIC CATARRHAL JAUNDICE"

BY

JOHN WARING, M.B., B.S.

The purpose of this article is to record the occurrence of acute lymphocytic meningitis in a case of epidemic catarrhal jaundice and to criticize the terms "epidemic catarrhal jaundice" and "infective hepatitis." It is suggested that the infectious disease described under these names is not of necessity a condition affecting the liver, but is in fact a general virus infection, such as influenza, in which the primary site of invasion is frequently the gastro-intestinal tract. The advent of hepatitis and meningitis should be regarded as an indication of increased invasive power in subjects whose resistance is low. The conception of influenza should be generic and not specific, so that it may include a number of virus diseases epidemic in nature which at present have not been identified.

The objection to the terms "epidemic catarrhal jaundice" and "infective hepatitis" is that they give a false impression of the disease they represent, because they do not include the diarrhoeal cases, of which there are many, and the simple gastric types, in neither of which jaundice occurs. In support of this view some personal observations are described.

A Gastro-intestinal Epidemic in Letchworth

During the past 15 months there has been prevalent in Letchworth an infectious disease characterized by acute gastro-intestinal disturbance and frequently jaundice, obstructive in type. Three distinct forms have been observed: (1) the diarrhoeal group; (2) the vomiting group; (3) the jaundiced group. These forms have occurred repeatedly in the same household. The diarrhoeal variety has been more commonly seen. The incubation period has been difficult to assess, but may be short or as long as four weeks. There were no symptoms referable to the upper respiratory tract.

The Diarrhoeal Group.—The onset was abrupt, with diarrhoea, colic, and tenesmus, some patients vomiting once or twice during the first few hours. Slight general abdominal soreness was present, but there was usually little constitutional disturbance, and fever was mild or absent. The frequent watery motions continued for 1 to 5 days, then ceased abruptly. In a few cases recovery was delayed and small evacuations of clear mucus were passed in decreasing frequency for 3 to 5 weeks. Only in the acute stage was a fleck of blood to be seen in the motions. In several typical cases cultures from a stool passed within the first 24 hours revealed no pathogenic bacterium.

The Vomiting Group.—In these cases the onset was sudden, with shivering, epigastric discomfort, nausea, and vomiting. Sometimes one or two loose motions were passed on the first day, but subsequently constipation was the rule. There were considerable malaise and prostration, and continuous fever, which rose to 102°, persisted for 4 to 6 days, then fell by crisis. Vomiting continued during the period of fever.

The Jaundiced Group.—The clinical picture was similar to that of the vomiting group, but epigastric discomfort was more severe, amounting to pain. Patients complained bitterly of this symptom. Repugnance to food was usual, being associated with marked nausea and vomiting, which continued until the fourth or fifth day, when jaundice appeared. Thirty-four jaundiced cases have been observed, and in nearly all of them the liver was palpable and tender; sometimes the enlargement was considerable. In only one case was the spleen definitely felt, and this accompanied a much swollen liver. Jaundice may be slight, visible only in the urine or eyes for a day, or deep and fluctuating, persisting for five weeks. The average case was yellow for 6 days. A considerable degree f debility was present after convalescence was established, which delayed return to normal health for 4 to 6 weeks.

A Case of Acute Lymphocytic Meningitis

A man aged 27 developed meningitis *pari passu* with jaundice. His case was made more perplexing by the fact that he is a proved case of pulmonary tuberculosis, in which clinical arrest was achieved one year ago.

On Dec. 20, 1942, he became shivery and complained of headache. Vomiting occurred once or twice each day, and his temperature fluctuated between 99° and 101°. On Dec. 25 the conjunctivae became definitely yellow, but were clear the next day. His headache varied in intensity, but on Dec. 30 its severity became agonizing, with paroxysmal shooting pains between the temples. The patient did not look ill though he was obviously suffering considerably with his head. There was no neck rigidity, a questionable Kernig's sign was present, arm and leg reflexes were sluggish, abdominal reflexes were absent, plantar responses were flexor, and there was no papilloedema. The urine gave a green reaction with Benedict's solution. On admission to hospital lumbar puncture revealed a slightly opalescent fluid under increased pressure. Much relief from headache was obtained after 30 c.cm. of fluid had drained away. Examination of the c.s.f. showed a small fibrin web-cloth. A cell count gave 544 mononuclears (mainly lymphocytes) and 24 polymorphonuclear leucocytes per c.mm. The chloride content amounted to 710 mg. and protein to 75 mg. per 100 c.cm. Sugar was absent, and globulin increased. A scanty centrifuged deposit gave the following results: Gram film—no organisms seen; Ziehl-Neelsen stained clot—no tubercle bacilli seen; cultures on blood legumin agar and in peptone broth were sterile after 24 hours' incubation.

Jan. 1, 1943.—Lumbar puncture performed and 25 c.cm. of clear colourless fluid under increased pressure allowed to escape. Cell count, 300 per c.mm. Reflexes still sluggish, but abdominal reflexes now present.

Jan. 3.—Vomiting ceased. Temperature normal.

Jan. 5.—Patient looked well, sitting up in bed. Arm and leg reflexes were easily obtained. Lumbar puncture performed and 20 c.cm. of clear fluid under slightly raised pressure drained away. Examination of c.s.f. showed a clear colourless fluid with no clot. A cell count gave 336 mononuclear cells (mainly lymphocytes) and 56 polymorphonuclear leucocytes per c.mm. The chloride content was 715 mg. and protein 80 mg. per 100 c.cm. Sugar: Fehling reduction present. Globulin slightly increased. Convalescence was uninterrupted except for intermittent headache of mild degree for three weeks.

An intensive course of sulphathiazole, which was well tolerated, was given by mouth for five days (12, 8, 6, 6, 6 g.) after his admission to hospital. Since the cerebrospinal fluid became clear in 48 hours it would seem that the drug was beneficial.

Conclusion

It seems reasonable to deduce from these observations that the current epidemic in Letchworth is a virus infection primarily affecting the gastro-intestinal tract; that the weight of infection more commonly falls on the small and large bowel, producing an acute catarrhal ileocolitis, the degree of gastritis being minimal and hepatitis absent. Less often the stomach bears the brunt of the infection and colitis is minimal. In the present epidemic the majority of gastric cases develop hepatitis in greater or lesser degrees of severity. Approximately one case of jaundice has been seen for every six cases of diarrhoea—i.e., an incidence of 14%. Uncommonly the virus invades the leptomeninges, causing an acute lymphocytic meningeal reaction.

A number of severe cases of influenza, as distinct from febrile catarrh of the respiratory tract, have occurred recently in which diarrhoea with colic and abdominal discomfort was the initial phase. After 36 to 48 hours invasion of the respiratory tract occurred, starting as a tracheo-bronchitis and later becoming a bronchiolitis with pulmonary congestion. Outbreaks of jaundice in other parts of England have been reported in which the upper respiratory tract seemed to be the primary site of invasion.

The influenzal epidemic has different features each year. It may be gastric or intestinal with vomiting or diarrhoea, gastro-hepatic with vomiting and jaundice, tracheal with cough and substernal soreness, pharyngeal with pain in the throat, or simple fever with malaise. Retro-orbital pain and headache are almost constant and often severe, but may be slight or absent in the gastro-intestinal forms. Whichever type invades the community, it seems to breed true to a remarkable degree for about a year. The cases which differ from the current

form frequently start with the usual symptoms, and thus a different variety becomes established imperceptibly.

What benefit is to be derived from describing epidemic catarrhal jaundice as a separate clinical entity? It is stated that outbreaks of the disease often accompany an increased incidence of diarrhoeal disorders and that the initial symptoms may be of the "influenzal" type. Only one form of the disease is described by this name, and therefore it is misleading. These facts surely support the adoption of a wider conception of influenza.

Summary

It is suggested that the application of the term "influenza" be generic; that the names "epidemic catarrhal jaundice" and "infective hepatitis" are unsatisfactory, and that "influenzal jaundice" or "hepatitis" would convey a clearer conception of the disease.

A case of acute lymphocytic meningitis occurring in influenzal jaundice is described.

I wish to thank Dr. P. F. Wilson for his permission to publish this case, and the pathologist, who desires to remain anonymous, for allowing me to include his reports on the cerebrospinal fluid.

PSEUDOSCLERODERMIA

BY

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The following case of pseudosclerodermia arising from multiple deficiency may be of interest owing to the rarity of the condition.

Case History

A man aged 63 was admitted to hospital on July 15, 1941, complaining of stiffness in his legs, which prevented him from walking. He stated that he had been perfectly well until approximately one month before admission, when his right knee-joint suddenly swelled and became painful, forcing him to rest in bed. This swelling was attributed to a slight injury received to the same knee two days earlier which caused only momentary discomfort. After a few days in bed he noted that the skin of both his legs below the knee was becoming darker in colour than usual, the right leg being more involved than the left. This discoloration extended, and within the next seven to ten days it had involved the skin all over his body, being most pronounced on the face and neck, the backs of the hands to the wrists, and the legs from mid-thigh down. During this time he had been rising to attend to his own wants, but about 14 days before admission he began to have difficulty in straightening his legs at the knees. This stiffness progressed, and for some days before admission he was confined to bed with his knees fixed in a position of semiflexion. He stated that he had been feeling tired for an indefinite period, and that for the past month his bowels had been loose. There was no history of sore tongue or of Raynaud's syndrome.

The patient was unemployed, and his total income was 16s. 6d. a week from public funds. His expenditure was 4s. 6d. a week for his bed in a lodging-house, 2s. for tobacco, and the rest for food, etc. He did not drink alcohol. He cooked for himself, and lived mainly on pies, sausages, white bread, and scones, never eating fruit or any vegetables except a very occasional potato, and using condensed milk and margarine in place of fresh milk and butter. There was no previous illness of any note.

Clinical Condition

Routine examination revealed a small, thin, wasted man with a light-sepia-coloured skin with uniformly darker areas on the face and neck, backs of hands, and legs from mid-thigh to mid-dorsum of the foot. There was no special pigmentation around the nipples, on the pubes, or on points where pressure from clothing normally occurs. He was edentulous, had pale mucous membranes, a dry glazed but not inflamed tongue, atrophic ribbed finger-nails, pure white luxuriant hair, and patches of brown pigmentation on his buccal mucosa. There was no circumcorneal injection or cheilosis. Both corneae appeared healthy, and there were no petechiae or evidences of deeper haemorrhages. He appeared comfortable, but was slightly inattentive and confused. The skin around both his legs from 6 in. to 9 in. above the knee-joints to about the middle of the dorsum of his feet, but not on the soles, was brown in colour, thick, hard, and glossy to touch, was hairless, and could not be moved on the underlying tissues. The skin elsewhere, although discoloured, was of normal consistency and mobility. The thickened skin was raised slightly above the normal skin, and the junction between was sudden (within 1/4 in.) and uneven. The legs were not swollen and were not tender on pressure. Sensation over the affected area was dulled but not entirely absent. Both legs were held flexed at 45 degrees at the knees, and movement at these joints, which were not swollen, was painless but limited to a range of 45 to 60 degrees flexion by the tightness of the surrounding skin. Movement at the ankle-joints was also slightly limited. Movement at all other joints was normal. Further examination revealed no physical defect, and the remaining points of particular interest which helped in making a diagnosis are:

Skin temperature steady at 97.4°; pulse 75 to 80 a minute, regular; blood pressure 145/80. Test-meal (including histamine): no free HCl. Faeces 4 to 6 soft pale motions daily; total fat 33.9 g.%—split fat 27.2%, unsplit fat 72.8%. Urine: routine tests negative; ascorbic acid (estimated as reducing substance), *nil*; creatin, 14 mg. per 100 c.cm. Blood: W.R. negative; plasma proteins, normal; urea, etc., normal; B.S.R. (Westergren), 6 mm. per hour; plasma ascorbic acid, 0.10 mg. per 100 c.cm.; sugar tolerance, normal curve; R.B.C., 3,310,000 per c.mm.; Hb, 38%; C.I., 0.58; W.B.C., 8,200 per c.mm. Film showed poor filling of red cells, anisocytosis and poikilocytosis, and a normal differential white count. Radiographs of knees showed only slight atrophic arthritis. Cuff test (Hess), negative. Microscopical examination of biopsy from affected skin resulted in the following report:

> "The tissue consists mostly of vascular scar tissue. Enveloped in it are small foci of adipose tissue and dense fibrous fascial bands; at one side is striped muscle, which, at margin of scar tissue, is partly atrophied, partly hyperplastic (sarcolemmal cells proliferating). There are recent haemorrhages in the scar and also scattered granules of old blood pigment (previous haemorrhages probably). The appearances suggest scar formation in and adjacent to muscle and perhaps accentuated by haemorrhage."

Diagnosis

On the history and findings recorded above a multiple deficiency state was diagnosed, obvious deficiencies being nicotinic acid, ascorbic acid, and iron. The general pigmentation was considered to be part of the pellagroid change, and the thickened skin on the legs to be the result of this plus very minute multiple haemorrhages, the result of the vitamin C lack. The probability that other deficiencies aided in producing the curious localized change in the legs was great, but it was impossible to estimate their part in doing so. The diagnosis was made, therefore, of pseudosclerodermia the result of vitamin deficiency, and support was lent to this by the earlier records of a precisely similar change occurring in the legs of old people with scurvy (Pfeiffer, 1918). Other causes of the changes that were considered and excluded on the facts which have been given were: (*a*) true symmetrical diffuse sclerodermia (sclerodactylia); (*b*) chronic cellulitis of legs with, as superadded causes of the general pigmentation, Addison's disease, haemochromatosis, and chronic vermin infestation of the skin. The presence of creatine in the urine was considered normal at the patient's age.

Treatment

Treatment was designed to test this diagnosis, and was conducted in various stages. The first stage was the maintenance of the patient for a period on the ordinary hospital diet, in order that its action could be assessed; the successive stages consisted in the addition to this diet of the obviously absent vitamins, in order that their action in promoting cure could be assessed also. Ascorbic acid was replaced first, mainly because the condition had been described before in association with scurvy.

Table showing Results of Treatment

Clinical Feature	Stage I: 18/7/41 to 18/8/41 Ordinary Hospital Diet	Stage II: 18/8/41 to 8/10/41 Ord. Diet + 7,000 mg. Vit. C in 14 Days, then 200 mg. Daily by Mouth	Stage III: 8/10/41 to 24/1/42 Ord. Diet + 200 mg. Vit. C + 200 mg. Nicotinic Acid Daily by Mouth	Stage IV: 24/1/42 to 9/3/42 As Stage II + 1,000 I.U. Vit. B I.M.I. Daily
Blood { R.B.C.	3,970,000	4,150,000	5,000,000	5,000,000
Blood { Hb ..	50%	66%	75%	79%
Bowels ..	Stools still frequent and soft	Improved but not normal	Normal	Normal
Mental state	As on admission	Slight improvement	Marked improvement to normal	Normal
Pigmentation	,, ,,	Slight improvement	Marked improvement	Normal
Skin thickening	,, ,,	Very slight improvement; smaller area involved Knee movement 35°–60° flexion	Great improvement; small slightly thickened area on skin only remains Knee movements full and free	Completely healthy skin

The accompanying table shows the details of each stage of treatment, its duration, and the changes in the clinical features of the case as each stage was concluded.

On completion of treatment the initial tests were repeated, and it was found that all those previously abnormal were now normal. Creatine in small amounts was still being excreted in the urine. The patient was discharged well on May 1, 1942, and when last seen (Oct., 1942) was still free from recurrence of the skin lesion.

Comment

The little change shown in the skin, etc., of the legs when only ordinary diet was given, and the marked improvement ending in complete cure when the diet was supplemented and the existing deficiencies were corrected, suggest that the diagnosis of pseudosclerodermia arising from multiple vitamin deficiency was correct. According to the table the most marked improvement occurred when nicotinic acid was given, suggesting that it was lack of this factor which was mostly responsible for the condition. This may be so, but whether nicotinic acid would have had such a marked action in the absence of adequate vitamin C nutrition is doubtful, as in multiple deficiencies vitamins are notoriously interdependent for their action. It is only possible to suggest that the combination of deficiency of nicotinic acid, ascorbic acid, and thiamin, in that order of importance, precipitated the pseudosclerodermia.

The slow response to treatment was not considered abnormal, as this is often a feature in multiple-deficiency states, and particularly so in lesions affecting the skin (O'Leary, 1942). Quicker results could have been obtained had all the missing factors been supplied together. The failure of the lesion to respond to replacement of vitamin C only, plus the failure of the author to observe any condition really closely resembling sclerodermia—although skin thickening was often seen—in 58 old people with clinical scurvy observed over the past five years suggests that the lesion noted in association with scurvy by Pfeiffer, if really resembling sclerodermia as did the case described above, was the result also of multiple deficiency, vitamin C not being the most important lack.

Changes faintly resembling certain stages of true sclerodermia may result from vitamin deficiency and are not uncommonly found. The changes seen and the factors responsible are: (*a*) subcutaneous oedema, causing apparent skin thickening and fixation and muscle tenderness from lack of vitamin B (Eddy and Dalldorf, 1941); (*b*) atrophy of epidermis, papillary oedema, papillary capillary dilatation, slight oedema of the dermis, and pigmentation from lack of nicotinic acid (Eddy and Dalldorf, 1941); (*c*) subcutaneous haemorrhages causing thickened skin and pigmentation due to lack of vitamin C; and (*d*) atrophy of muscle fibres in experimental animals, due to lack of vitamin E (Pappenheimer, 1939; O'Leary, 1942).

Other records of pseudosclerodermia of nutritional origin are few. Reports of cases which might have had this origin are: (*a*) a lesion similar to that described in this paper in a patient in association with Sjogren's syndrome (Sheldon, 1939); and (*b*) a lesion in a poorly nourished woman in whom cure resulted when a good diet was given (Meakins, 1926). It is suggested that it might be more common than is thought, and, as support, attention is drawn to the reports of sclerodermia appearing in patients debilitated by cancer of various organs, in some of whom it disappears when the cancer has been treated and the general nutrition improved, good food being noted to be particularly beneficial in one instance (Behrman and Forman, 1939; Bezecny, 1935).

It is not suggested that vitamin deficiency is the cause of true sclerodermia, and a search has failed to reveal any example of vitamin deficiency or deficiencies causing a change which microscopically resembles the true condition. As the clinical resemblance may be very great the importance of a biopsy in making a diagnosis of sclerodermia is obvious, as without it mistakes could be made and the patient given an entirely wrong prognosis and treatment.

Lastly, although it is not intended to discuss vitamin C in general, the need of this substance by healing wounds (Crandon *et al.*, 1940) is well shown by the behaviour of the biopsy in this case. The wound made on Aug. 3, 1941, when the patient was subscorbutic, showed little healing by Aug. 18, after which date the rate of healing accelerated markedly, the wound being firmly closed by Aug. 27. This acceleration corresponded to the addition to the patient's diet of 500 mg. of vitamin C daily by mouth, and was obviously governed by it, as all other factors were unchanged.

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PNEUMONIA TREATED WITH SULPHAMETHAZINE

REPORT OF 77 CASES

BY

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During the latter part of the past winter we have treated 77 cases of pneumonia with sulphamethazine (2-sulpha-4 : 6-dimethyl pyrimidine), one of the latest additions to the sulphonamide group. It is built up on the same plan as sulphadiazine, with the addition of two methyl groups to the pyrimidine ring. This addition is claimed by the makers (I.C.I.) to increase the solubility of the drug and render its deposition in the kidneys unlikely. This effect was a serious disadvantage of sulphadiazine.

Of the 51 bronchopneumonias treated in the under-12 group 30 were secondary to measles, 2 to whooping-cough, and the rest primary. The ages varied from 4 weeks to 85 years. The normal dosage of sulphamethazine employed, as recommended by the makers, is 8 g. daily for an adult, given six-hourly in 2-g. doses. As children take these drugs better than adults we assumed the adult weight for the standard dose to be 8 st., and gave a fraction of this dose according to their weight—that is, a 4-st. child received half the adult dose and so on. The full dose was given for four days, and half the dose for a further two days. Plenty of fluids were administered, and oxygen tents were used as considered necessary.

We were unfortunately unable to estimate the blood concentration with these doses. All the cases responded more promptly to the drug the earlier in the disease it was given. We think the response in cases responding favourably is slower than with sulphapyridine, but the mortality was low, as only three died (4%). One 13-weeks-old baby with whooping-cough and bronchopneumonia was admitted on the sixth day and died four days later. Another fatal case had measles and bronchopneumonia, was admitted on the sixth day of disease, and died on the fifth day after admission. One patient with extensive bronchopneumonia—a female aged 26—survived only 12 hours after admission. Nine other cases showed no obvious response to the drug within six days, but eventually recovered.

Out of 77 patients, therefore, 65 appeared to respond and 12 did not; three of the latter died. Of those not responding, 6 cases in adults appeared to be aberrant cases of lobar pneumonia. From one of the children who did not respond a nearly pure culture of *Staph. aureus* was found in the sputum, and she developed a staphylococcal pyaemia. Not one case in the series developed an empyema.

Toxic Effects

Owing to the risk of renal blockage and urinary suppression with the related suphadiazine, a careful watch was made on renal secretion. One child aged 2 showed almost complete sudden urinary suppression for one day. On stopping the drug the renal flow was restored within 24 hours. No crystals

were visible in the urine, which showed only a trace of albuminuria. This patient, and two others under 2 who showed no chemical or microscopical abnormalities in the urine or any suppression, developed a curious painless brawny oedema of the whole legs and arms. The tissues did not pit on pressure. The appearance of the extremities was such as is sometimes seen in children with a tendency to chilblains during cold weather. It appeared to be due to some form of circulatory disturbance. It was not due to cold, as the wards were well heated, and the condition passed off in all three cases within 36 hours of stopping the drug. All three children were acutely ill, and were being treated in oxygen tents. They had some cyanosis of the face, due to the primary disease. All three made a good recovery. We had not observed this condition previously in any patients treated with other sulphonamides. In one other case there was a transient haematuria without any crystal deposit and without diminution of urinary flow. The drug was continued in this case without any obvious ill effect.

Apart from these possible toxic effects, sulphamethazine was extremely well taken. Vomiting was entirely absent. Slight nausea in three cases did not necessitate stopping the drug. There was no mental disturbance or depression, which are such a marked feature of cases treated with sulphapyridine. Many of the patients developed good appetites during early convalescence and were able to take large amounts of food without inconvenience while still receiving the drug. The non-toxicity of the drug was especially noticeable with middle-aged and old patients. Cyanosis was not as pronounced as with other sulphonamides. Our conclusions so far are that this is the best drug we have used for pneumonia, especially for older patients.

Working in this hospital, Ormiston, Woodman, and Lewis (1942) had a very similar mortality rate in a similar series of 140 cases treated with sulphapyridine. In another series of 120 cases (Peters, Woodman, and Lewis, 1939) reported from this hospital the mortality rate was 9% with sulphapyridine. In the accompanying table we mean by "response" that the patient became apyrexial and began to improve within the period stated.

Age Group	Response to Sulphamethazine in Days								No Response within Six Days		Total
	2 Days		3 Days		4 Days		5 Days				
	Br.	Lobar	Br.	Lobar	Br.	Lobar	Br.	Lobar	Br.	Lobar	
0–2	6	1	4	1	4	–	–	–	5*	–	21
2–12	6	3	9	4	5	1	1	1	–	–	30
12–40	2	3	–	3	–	–	–	2	1†	4	15
40 and over	1	2	–	2	–	4	–	–	–	2	11

* 2 died. † Died.

Summary

A series of 77 cases of pneumonia treated with sulphamethazine is reported, with a death rate of just over 4%.

The drug is extremely well tolerated at all ages, and appears to be remarkably free of serious toxic effect, especially in middle-aged and elderly patients. The results are as good as with sulphapyridine.

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Full details of the official forms of help available to local authorities in running publicity campaigns for the immunization of children against diphtheria are contained in a special brochure put out by the Ministry of Health, the Ministry of Information, and the Central Council for Health Education. This provides in handy form a complete guide for any local authority wishing to embark on, or intensify, an antidiphtheria campaign. It is pointed out that as the result of the vigorous efforts already made about 4,000,000 children have been immunized. But there are still over 4,000,000 children unprotected. The need for action, both national and local, therefore remains urgent if the aim of immunizing at least three out of every four children between the ages of 1 and 15 is to be achieved.

THE EFFECT OF INJECTIONS OF H 11 ON THE GROWTH OF MOUSE TUMOURS

BY

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In view of the account by Gye, Ludford, and Barlow (1943) of their experiments with H 11 on tumour-bearing mice a summary of tests with similar extracts which were carried out in this laboratory in 1941 and recorded briefly in the Annual Report of the British Empire Cancer Campaign, 1942, may be of value, particularly as the two neoplasms for the most part employed were different from those utilized by the above workers.

The first is a spindle-celled sarcoma, which was produced in 1934 by inoculation of dibenzanthracene into the hind leg of a mouse and has since been transplanted through 170 passages with a high percentage of successful grafts and a very small number of spontaneous regressions. Its characteristics and histology have been intensively studied (McDonald and Woodhouse, 1938), and it has been utilized in a number of investigations, including the anti-cancer properties of various chemicals (Annual Reports of British Empire Cancer Campaign, 1941, 1942), tissue-culture experiments (Jacoby, 1940), and inoculation experiments on the chorio-allantoic membrane of the chick embryo (Jacoby, McDonald, and Woodhouse, 1943).

The second type is represented by benzpyrene-induced skin epitheliomas which also have been employed on a considerable scale for testing the possible inhibitory effects of chemical and physiological substances. Spontaneous regression of these tumours is very infrequent, and the animals may survive in good general health for several months after the appearance of papillomas, so that therapeutical injections can be made over a long period. Moreover, this type of growth permits injection experiments to be started before active invasion of the underlying tissues has taken place—i.e., in the pre-malignant phase (see protocols 4 and 5)—and in a way seems more comparable to spontaneous tumours than to a grafted neoplasm after many passages.

A small number of mice inoculated with a strain of Carcinoma 63 were also therapeutically injected. This tumour material was derived from an animal kindly given by Dr. Ludford to my colleague Dr. F. Jacoby, and is presumably identical with the Carcinoma 63 described in the paper by Gye *et al.*

The Injection Material

The examples of H 11 used were: (*a*) A specimen kindly supplied by Mr. Thompson of the Hosa Laboratories described as of twice the concentration for normal use. (Designated in the protocols as "Hosa.") (*b*) Three extracts prepared according to the directions of Thompson and his collaborators (1941) from different samples of normal male urine. (Designated in the protocols as "Birmingham, 1, 2, 3.")

Animal Material

The total of tumour-bearing mice in 8 separate experiments was 104—43 with spindle-celled sarcomas (controls included), 19 with skin epitheliomas, and 22 with "Carcinoma 63" (controls included); 20 epithelioma-bearing animals served as controls for the "epithelioma test," some receiving injections of various chemicals and others no injections or saline only. Large and vigorous animals about 5 months old were used for the grafted tumours. The applications of benzpyrene had been begun when the animals were about 10 weeks old. Although the mice were not of a pure strain they were taken from the same stock of "albino-whites."

All the injections were made intraperitoneally and, in the case of the carcinoma-grafted animals, through the flank opposite to the site of the growth.

Results

A survey of the outcome of all the tests clearly indicates that the H 11 preparation has no inhibitory effect on any of

* Carried out for the British Empire Cancer Campaign, Birmingham Branch.

these tumours. The experiments with Carcinoma 63 (12 animals treated) conform exactly to those of Gye and his co-workers, and need not be reported in detail, and only the protocols dealing with the dibenzanthracene sarcomas and benzpyrene skin epitheliomas are given below.

It will be noted that, in experiment 2b, 6 animals were injected with H 11 on the same day as the grafts were introduced. In spite of this, four large tumours developed. Also, in experiment 5, minute warts, at probably a precancerous stage, were in no wise inhibited.

The sarcomas from two animals which had received injections daily for 16 days were examined histologically (experiment 3). Some central necrosis, such as is generally found in tumours at this period, was present, but there were many portions of normally staining sarcomatous tissue. Moreover, the tumours were still capable of vigorous growth, as was proved by re-inoculating fragments into three mice, two of which developed typical sarcomas. The microscopical appearance of a skin epithelioma from a mouse after 20 days' therapeutical injections (experiment 6) showed no material difference from sections of benzpyrene-induced epitheliomas in control animals.

Protocols of Animal Experiments with H 11

(1) 18 albino mice, average weight 30 g., inoculated with 155th sarcoma graft August 24, 1941. 16 definite tumours palpable August 29. 6 retained as controls. 10 injected twice daily with preparation Birmingham No. 2 until death of animal.

Results.—Controls: 1 tumour regressed by Sept. 29; remainder grew—period 16 to 35 days. Injected: 1 tumour regressed by Sept. 17; remainder grew similarly to controls—period, 8 to 28 days.

(2) 20 mice inoculated with 154th sarcoma graft August 6, 1941. 2 animals died, August 9 and 10. (a) 6 untreated, for control. (b) 6 injected H 11 ("Hosa" extract diluted with equal volume of water), starting August 6. (c) Ditto starting August 11.

Results.—(a) One graft—no take. One graft regressed by August 20. 4 large tumours developed; animals survived 30 to 40 days. (b) 2 grafts—no take. 4 large tumours after 24 to 68 injections—i.e., 12 to 35 days. (c) One graft—no take. 5 definite tumours after 26 to 80 injections—average duration 28 days.

(3) 12 mice implanted with sarcoma August 12, 1941. 11 successful takes visible August 17. 6 inoculated with H 11 "Hosa" double strength 1 c.cm. daily for 16 days. (One injected animal died after 10 days' treatment.) Killed with 5 controls Sept. 3 and legs with tumours removed. Combined weight of tumour-bearing legs of 5 controls, 15.3 g.; of 5 injected, 19.2 g.

(4) 6 mice with skin papillomas resulting from 5 months' application of benzpyrene solution in acetone. Applications suspended for 1 week before injecting with H 11 (Birmingham 1). These tumours were of different sizes and at various stages of "malignancy." Injections of H 11 for average of 43 days. In all cases the tumours grew, in several instances producing large keratinized masses which appeared by inspection to be at "malignant" stage at death of animal. This was confirmed in some cases by microscopical examination.

(5) 7 mice with papillomas selected at varying stages of development from small "wart" to medium-sized growth, 10 by 10 mm. Injected extract Birmingham 2 twice daily. All the tumours enlarged, and in instances in which two or more warts were present these fused into one large mass, 12 by 20 mm. Average injection time, 26 days.

(6) 6 mice with epitheliomas 7½ by 10 mm. Injected 24 days with "Hosa" extract. Final size, 20 by 28 mm.; no instance of reduction in size. This corresponds to rapidity of growth in many series of control animals used in a variety of experiments.

Summary

In 54 mice bearing grafted dibenzanthracene sarcomas, Carcinoma 63, or induced benzpyrene skin epitheliomas no inhibitory effect on the tumour growth was found after prolonged injections of the urine preparation H 11 or similar extracts.

Two sarcomas removed from mice after such injections were successfully grafted into other animals, and histological examinations of treated tumours showed no difference from control material.

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COMPOSITE ZIEHL-GRAM STAINING METHOD FOR SPUTUM, PUS, AND EXUDATES

BY

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The majority of sputa sent to the pathologist for examination are accompanied by a request for tubercle bacilli and "organisms," or for "predominant organisms." Culture is usually not required, though this may be undertaken by the laboratory either for interest only or to confirm the presence or give more detail of the organisms seen by direct film. These specimens are examined by the Ziehl-Neelsen and Gram staining methods. At least two films must be prepared, stained, and examined. The same applies to pus from various sources—e.g., pleural cavity, glands, or kidney—where tubercle bacilli are suspected. Where large numbers of such specimens are examined daily, as in chest hospitals, big general hospitals, and public health "swab and sputum" laboratories, much time is spent in staining and examining the films. Moreover, the preparation of stains and slides occupies a great deal of the time of the technical staff. A single staining method which would show the presence of tubercle bacilli and "other organisms," both Gram-positive and Gram-negative, would be of great value. The more lengthy search for tubercle bacilli could then be made, while at the same time noting the presence and probable nature of other organisms. Further examination by culture or inoculation would follow as usual where indicated. Such a method, as used at the Brompton Hospital laboratory, is described below.

Technique of Method

Thin evenly spread films are essential, as three different colours are used; poor films—a disadvantage in any method—are useless. For this reason the method is not recommended for beginners, nor in laboratories where only a few specimens of this type are dealt with.

Fix the films by heat in the usual way.

The following stains and reagents are required: (A) Carbol-fuchsin: a 1% solution of basic fuchsin in 5% aqueous phenol (as for Ziehl-Neelsen). (B) Picric acid decolorizer: saturated solution of picric acid in ethyl alcohol, 5 parts; acetone, 1 part. Keep in a well-stoppered bottle or a staining trough with well-fitting cover. (C) Crystal violet: 0.25% aqueous solution. (D) Gram's iodine. (E) Acetone. (F) Auramine green counterstain.

Only one new stain is used. This I have called "auramine green." It consists of a combination of two basic dyes—auramine, an orange-yellow stain, and China green (or malachite green), which in solution gives more of a blue than a green colour. Gurr's reagents are used. The stain is prepared as follows:

Make 1% solutions of auramine and China green in distilled water. Shake occasionally for 24 hours. A deposit will be obtained with the former; this may be filtered off either before or after combination of the two stains. Alternatively, the supernatant stain may be pipetted off after standing. Mix in the proportion of 9 parts of auramine to 11 of China green and filter if necessary. Alcohol is not needed for solution. The mixture keeps well for several months with occasional filtering.

Flood films with A and heat to "near boiling" on the slide. Stain for 5 minutes or more. Wash off stain with water. Add B. Renew after 2 to 3 minutes. The average sputum film will require 4 to 6 minutes; but thin films, such as those from swabs—e.g., from a fistula in ano—will not need a further addition of decolorizer. (Alternatively, a dish may be used in which the slides may be immersed until just decolorized.) Wash thoroughly in water. Flood films with C—1 minute. Wash in water. Add D—1 minute. Decolorize with acetone. Wash quickly in water and apply F (auramine green counterstain)—15 to 30 seconds. Do not leave the stain on too long or overstaining of the background may occur and differentiation of the organisms be rendered less clear. Wash in water, blot, and dry.

The picture is as follows. Tubercle bacilli are stained crimson, with their beading showing as black dots at intervals

along the bodies of the organisms. This feature is more obvious in older specimens. *Myco. smegmatis* is decolorized and takes up a greyish-green colour, losing some of its Gram-positive character when treated with acetone. Thus urine sediments or pus from the urinary tract are suitable for examination by this staining method. Gram-positive organisms such as pneumococci and staphylococci appear violet-black, as in the usual Gram stain; while Gram-negative organisms such as *N. catarrhalis* and Friedländer's bacillus are grass-green in colour. The background of fibrin, mucus, and debris takes up a light-green tint, while cells vary somewhat according to their type and age. Thus epithelial cells show bluish-green nuclei with a light yellowish-green cytoplasm. Polymorph leucocytes, if not degenerate, show a deeper staining of both nuclei and cytoplasm, the latter being paler. Old degenerate pus cells take up a more uniform pale-green stain with more or less differentiation between nuclei and cytoplasm. Lymphocytes show a deep bluish-green nucleus, while endothelials appear more mottled, with a paler cytoplasm. As in the ordinary Gram stain, old degenerate Gram-positive organisms take up the counterstain and appear Gram-negative.

Incidentally, auramine green counterstain has been found useful in the direct Ziehl-Neelsen technique in place of methylene blue, and also in Gram's method in place of neutral red or safranine, both for pus smears and films from culture. The colour is restful to the eye (as noted by Mackie and McCartney (1942) for malachite green in the former method). In my opinion, however, the cellular appearances are rather clearer when methylene blue is used, and where this feature is of importance the latter stain is recommended.

REFERENCE

Mackie, T. J., and McCartney, J. E. (1942). *Handbook of Practical Bacteriology*, Edinburgh.

Medical Memoranda

Blast Perforation of Ear-drums

The following short notes on 60 cases of blast perforation of the ear-drums occurring simultaneously among Indian troops in the Middle East following a land-mine explosion may be of enough topical interest to merit publication.

HISTORY OF CASES

All these men were within fifteen yards of the mine, and some as near as five yards. Casualties were admitted to hospital within three hours of the explosion, and the ears of all 82 immediate survivors were examined, when 60 were found to have traumatic perforation of one or both tympana. In all, 100 drums were perforated, 50% in the antero-inferior quadrant, the remainder showing either a posterior perforation or a horseshoe perforation involving the greater part of the membrane. Tuning-fork tests revealed a middle-ear deafness in each case, and, although sepoys are not very suitable subjects for such tests, the majority of them showed a diminution of absolute bone conduction also for several days after the accident.

Preliminary treatment in all cases consisted in the insufflation of sulphanilamide powder, followed by packing the ear with sterile gauze. Nine ears were occluded with wax and were left severely alone until three weeks after the injury. Only three of these nine drums showed a perforation at the end of that time. Of the two cases in which syringing was employed to remove wax both became infected, although they dried up subsequently within a fortnight. The proportion of drums infected was 38%, four of which were classed as severe infections, while two of these required a cortical mastoid operation two weeks after the accident. In both these cases the drum and the post-auricular wound were dry and had healed five weeks after operation. All infected cases received sulphapyridine, 1 gramme 4-hourly for five days, and many of the cases were put on sulphapyridine for their other injuries.

All but four drums were dry within four weeks; but as it was impossible to keep all the patients in hospital until their drums had healed the percentage of complete recovery is not available; 45% were healed within four weeks.

CONCLUSIONS

The antero-inferior quadrant is the commonest site of injury.

The proportion of infection to be expected under the most ideal conditions is 35 to 40%.

Insufflation of sulphanilamide powder is probably of value in preventing infection.

Deafness is of the middle-ear type, superimposed upon a temporary nerve-deafness.

The subsequent damage to hearing is not marked.

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Reviews

LECTURES ON MEDICAL ETHICS

Medical Ethics. By Rupert M. Downes, M.D., M.S., F.R.A.C.S. Based on a course of lectures by Dr. A. V. M. Anderson at Melbourne University. (Pp. 78. 5s.) Melbourne: Published by Ramsay (Surgical) Pty., Ltd., 340, Swanston Street. Obtainable at all booksellers.

This modest volume may certainly be commended to the junior practitioner as he enters on the responsible duties of his profession. It offers information and advice relative to positions which are met but imperfectly in the technical medical curriculum but are none the less important in the doctor's life and conduct as these are related to his colleagues, to his patients, and to the State. The advice in all the circumstances contemplated is excellent in itself and is based throughout on the recognized traditions of the profession. The author's persuasive style gives the book an attractive literary quality. If the subject offers little opportunity for originality in substance the manner in which the teaching is presented is both pleasing and effective.

There is no attempt to cover all the situations included in the department of forensic medicine. Rather the purpose is to explain and justify professional obligations which arise less from rigid rules than from personal opportunities and seemly customs and courtesies. In this respect the book is both comprehensive and well balanced. If we may suggest an addition it would be a paragraph on the value of personal insurances as a wise protection against the risks and contingencies which are part of the common lot.

The author acknowledges his indebtedness to the well-known textbook of the late Dr. Saundby, but he is mistaken when he suggests that there are not more recent counsellors in the field. Two limitations may be noted. First, not all legislation affecting medical practice in Australia—for example, the compulsory notification of venereal disease—applies in Great Britain; and, secondly, the book wants, and the anxious inquirer desires, an index.

NUTRITION OF MOTHER AND CHILD

War-Time Food for Mother and Child. By Geoffrey H. Bourne, D.Sc. (Pp. 78. 2s. 6d.) London: Oxford University Press. 1943.

In less than 100 pages the author has succeeded in simplifying the nutritional problems that beset expectant and nursing mothers and their offspring. There are chapters which deal lucidly with the difficult periods in a child's life—infancy, kindergarten, and school. The advice given on weaning is excellent and should prove most helpful to the harassed mother. Since the publication of this book official action has been taken to supplement the maternal diet with cod-liver oil and vitamin C. However, there are still women who do not know that capsules of the oil are available, who have difficulty in obtaining them, and who think that liquid paraffin is just as beneficial. A wise dispensation of the Ministry of Food, announced by Lord Woolton, is that from July 25 the expectant mother is to be entitled to two ration books, the additional one enabling her to obtain supplies of food beyond her normal adult ration.

On page 29 the advice about eating cheese seems to be out of its context: there is little iron in this food. The author has rightly stressed the importance of an adequate intake of vitamin C during lactation. He points out that dilution of cow's milk with cereal waters like barley and oatmeal and with limewater is no longer supported by medical opinion. Sugar in excessive quantities for the pre-school child is condemned. It is a pity the "Oslo breakfast" has not been described in more detail. Dr. Bourne asks what has happened to the health sandwiches introduced by those perspicacious medical officers of health, Drs. Milligan, French, and Hunt. These sandwiches were excellent supplements for children, and the author would like them provided throughout the country. We must agree that even in the "best" boarding schools diets are provided which do not contain all the essentials. We would go further, and include hospitals, both voluntary and municipal, in this indictment; and it is a good sign of the times that a

conference on hospital meals has lately been held on the initiative of the Food Education Society. There is no excuse for hospital food being so badly balanced, cooked, and served. It is the old story of good food spoilt in the kitchen. Until the kitchen staff is upgraded in status and pay to that in the operating theatre we cannot hope for improvement.

This book is intended for intelligent parents. It is doubtful whether the mass that throngs our maternity and child welfare clinics would digest some of its contents. But everyone working in these clinics, every health visitor, every midwife, every medical student should possess this nutritional guide.

STONES IN THE KIDNEY

Renal Lithiasis. By Charles C. Higgins, M.D. (Pp. 140; illustrated. $3.00, post paid.) Springfield and Baltimore: Charles C. Thomas. 1943.

The subject-matter of this book comprises the Beaumont lectures delivered by the author last year. He reminds us that the first *x*-ray diagnosis of a renal stone was made in 1896 by MacIntyre; Henry Morris first performed nephrolithotomy in 1880, and Beck in 1881 is credited with being the first pyelotomist, but we were under the impression that Czerny of Heidelberg preceded him. From a brief consideration of the history of the occurrence and behaviour of urinary stones the author passes to a discussion of the aetiology, and in this connexion the importance of vitamin A deficiency in giving rise to their formation. The "stone areas" of the world which Dr. Higgins associates with this deficiency are depicted on a map. A poorly balanced diet, particularly on deficient in vitamin A content, was probably the cause of the high incidence of urinary stones in children in the last century both in England and on the Continent. This no doubt explains the fact that accounts of operations on children for stone in the bladder are so often found in pre-Listerian surgical literature. Both renal and vesical calculi have been produced in experimental animals by withholding vitamin A from them, and the author quotes his own and other experimental work bearing on this, and also claims to have produced complete dissolution of calculi by administering a high vitamin-A alkaline-ash diet. On this regime a cystine stone dissolved in 11 months, and after the patient, a young boy, had been free from urinary lithiasis for 6 years, a high-purine vitamin-A-deficient diet produced a small cystine kidney stone in 5½ months. He thus demonstrates the influence of diet in both producing and causing the dissolution of urinary calculi. Other factors in aetiology, such as infections, hyperparathyroidism, gout, etc., are also discussed. Further sections of the book are concerned with the analysis of calculi and their surgical and dietary treatment. Diet tables, a bibliography, and an index complete this valuable little monograph, which should be widely read not only by physicians and surgeons but, we suggest, also by practitioners of preventive medicine, since it would appear that many urinary calculi are preventable.

Notes on Books

Sir ALMROTH WRIGHT has followed Volume I of his series of collected researches, which dealt with *Pathology and Treatment of War Wounds* and was noticed in our issue of Aug. 8, 1942 (p. 159), with Volume II entitled *Researches in Clinical Physiology* (William Heinemann Medical Books; 12s. 6d.). These miscellaneous papers, which are of wide general interest, are reprinted from various sources, including the *Lancet*, the *British Medical Journal*, the *Journal of Physiology*, and the *British Journal of Dermatology*. The chief subjects treated are the feeding of infants with undiluted citrated cow's milk; the arrest of haemorrhage; the reduction of excessive transudation through the capillaries; coagulability of the blood; and the procedure for dealing with respiratory collapse. The book ends with excerpts from Sir Almroth's *Technique of the Teat and Capillary Glass Tube*. No one should fail to keep the dust-cover on this volume, because the author's preface is to be found there and not in the usual place—between title-page and contents. Like everything he writes, this conversational prefatory letter reflects something of Sir Almroth's personality and is meant to make the reader think for himself.

It is not surprising that a sixth edition and several reprintings of the excellent textbook *A Short Practice of Surgery*, by Messrs. HAMILTON BAILEY and R. J. MCNEILL LOVE, have been called for since its first appearance towards the end of 1932. There is little to criticize in this new edition—the best part is undoubtedly the section on genito-urinary surgery, and perhaps the weakest that on the surgery of the nervous system. Although cerebral contusion is referred to, its complications and treatment are not mentioned. The commonest intervertebral disk lesion to give rise to sciatica is the lumbo-sacral and not that mentioned on p. 650. Illustrations are plentiful and good throughout, but no meningeal haemorrhage we have seen has ever looked quite like that on p. 598 (Fig. 651). The blood clot has always been considerably darker than that shown. The sixth edition will no doubt maintain the well-deserved popularity of this book. It is published by H. K. Lewis at 36s.

A Synopsis of Surgical Anatomy, by Mr. A. LEE MCGREGOR (John Wright, Bristol; 25s.), has the merit of being written by a practising surgeon who keeps it in line with current practice. The fifth edition is a welcome revision in this respect. The section on intervertebral disk lesions, for example, is an excellent account of modern views. Not all will agree with the author's long-term (6–10 years) condemnation of Syme's amputation, however, and we were disappointed that Lister's tubercle was not referred to in connexion with excision of the wrist or the complications of a Colles's fracture. The recent accounts of the subdeltoid bursa and the supraspinatus tendon are good. Throughout the book there are valuable injunctions such as: "In thinking of the shoulder and its lesions, it behoves the practitioner to think of it in terms of two joints, the shoulder joint and the subdeltoid bursa." We have the highest praise for this book and can confidently recommend the latest edition.

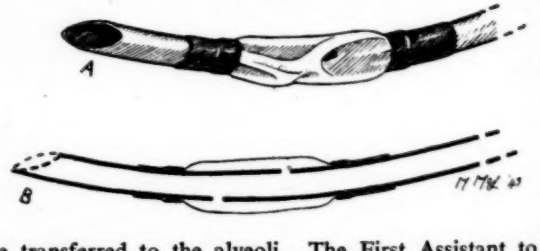
The small book entitled *First Aid at the Incident*, by E. K. MACDONALD, M.D., D.P.H., has been written chiefly for local instruction, at the instance of the Leicester Civil Defence Committee. It has two novel features: one "The Administrative Control of the Air-raid Incident," this is good; the other, "Maternity during an Air Raid," a possibility but probably rare. Twenty-five pages out of 123 seems a large proportion to be given to "Gas Warfare." Transport problems are well dealt with. On p. 97 alcohol is stated to be a "stimulant": this is not correct. The terms "closed" and "open" in connexion with fractures have their right place. There is an excellent index. The manual is not on sale to the public at present, but we are asked to state that readers who are interested in the matter may apply to Dr. E. K. Macdonald, Civil Defence Headquarters, 24, Halford Street, Leicester, who would then be able more easily to gauge whether to seek authorization for the issue of further copies.

Preparations and Appliances

SELF-INFLATING CUFF FOR ENDOTRACHEAL TUBES

Prof. R. R. MACINTOSH, D.M., writes from the Department of Anaesthetics, University of Oxford:

Leakage around an endotracheal tube is of little importance during the maintenance of anaesthesia with an ether mixture from an Oxford Vaporizer, since the ether concentration can be increased at the source to compensate for this leakage. When, however, the anaesthetist wishes to inflate the patient's lungs to achieve "controlled respiration," as, for example, in thoracic surgery, an air-tight junction between the tube and tracheal wall is essential if the gases in the reservoir bag are



to be transferred to the alveoli. The First Assistant to this Department, Dr. William W. Mushin, has suggested a self-inflating cuff on an endotracheal tube which solves this difficulty. It consists of a thin rubber cuff (finger-stall) about 2 to 3 in. long, cemented at each end to the endotracheal tube, which has two or three holes cut in that part of its wall which lies under the cuff. When pressure is applied to the reservoir bag the cuff blows up and forms an air-tight junction between the endotracheal tube and trachea, thus allowing the lungs to be inflated easily. I have used the Mushin cuff-tube in combination with the Oxford Vaporizer for major thoracic surgery, and have found it entirely satisfactory.

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THE NUTRITION MOVEMENT IN CANADA

A review of the development of the nutrition movement in Canada and an attempt to draw conclusions from Canadian experience may at this moment help us to bring matters into focus. A Canadian Nutrition Council first emerged in the spring of 1938 from the consultations of a special committee that had been formed by the Dominion Council of Health in the preceding year. The committee that had given it birth was constituted as the Council's executive body in association with its scientific advisory committee under the chairmanship of Dr. C. H. Best. A broad programme of investigation was drafted. Few surveys of Canadian diets had so far been carried out, though some investigations into the consumption of milk and other protein foods had been initiated by the Department of Agriculture; and in the course of 1937 an inquiry into food purchases in Alberta and into the dietary conditions of low-income families in Toronto had been undertaken. Four further surveys were therefore completed, under the direction of the Council, in Toronto, Halifax, Quebec, and Edmonton; the results were summarized in the *Canadian Public Health Journal* (May, 1941, **32**).

The findings of these surveys indicated to the Council that the nutrients in which the diets of low-income Canadian families were peculiarly deficient were aneurin and other members of the B group, ascorbic acid, calcium, iron, and vitamin A, in that order. It was tentatively estimated that some 20% of the subjects studied were seriously undernourished on a dietetic assessment, while a further 40% were in a borderline state. It has been further remarked that the average gain in weight by recruits to the Canadian Army during the first month of their service is 7 lb. The cumulative effect of these discoveries and of experience both in our own country and in the United States was sufficient to persuade the Nutrition Council to appoint a special committee in the November of 1941, charged with the task of expressing the ascertained deficiencies in terms of food. The committee's report was approved by the Council, and at the same time the Dominion Department of Pensions and National Health established a Nutrition Services Division under the directorship of Dr. L. B. Pett of the University of Alberta. The function of Nutrition Services has been to carry out recommendations of the Nutrition Council. To this end its staff of five (including three field workers) has been directed to work along the following lines: (*a*) to visit, inspect, and confer with those maintaining canteens in industrial plants with a view to assessing the nutritional value of the food served and to suggest improvements; (*b*) to help the public by advice on the choice of food, on suitable purchasing to secure a balanced diet, and on proper methods of preparation; (*c*) to make expert opinion available for the information bureau of the Department of National War Services.

The broad programme laid down by the Nutrition Council in the December of 1941 placed special emphasis upon the requirements of war workers. Accordingly the staff of Nutrition Services had by July, 1942, inspected about 150 war industries, comprising some 200,000 workers; additional information was assembled from a number of other plants; and a report was published summarizing the canteen facilities in 363 plants, which are stated to include well over half the war workers of the Dominion. It may be remarked that the delicate task of factory inspection was carried out under the authority of an Order in Council; but in June of the same year the Nutrition Council had suggested that, to avoid annoyance to industry and labour alike, the primary function of assistance to and inspection of canteens in war industries should rest with qualified representatives of the Federal Office (Nutrition Services), but that local groups were urged to make investigations into industry and the homes of industrial workers a part of any nutrition programme after consultation with Nutrition Services. A series of wholesome suggestions follows, closing with the recommendation that Divisions of Industrial Hygiene in Provincial Departments of Health shall co-operate with Nutrition Services.

The supplementary features of the programme proposed for the guidance of Dr. Pett and his colleagues are of some interest. All pamphlets used for nutritional education were to be reviewed and suggestions made for their simplification and standardization; studies were to be undertaken as to the best method of spreading nutritional information; use was to be made of the schools and the education departments; and, finally, Nutrition Services was envisaged as a central clearing-house of information on nutrition, which might assist in co-ordinating nutritional research in Canada. At the same time it was suggested that various existing groups might well be organized into provincial committees as a basis for the development of future campaigns. It is evident from the published material that the provincial committees, set up during 1942, are viewed as the intermediate link between the central authority in Ottawa and the community nutrition committees, through which the essential work is done. The provincial committees have been formed under the Provincial Departments of Health; and it has been their function to organize the province for the advance of the nutrition programme in all its aspects, as well as to advise the central authority on appropriate methods of education. The community nutrition committees are assumed to spring from the initiative of local interested groups or individuals. In the literature officially distributed such groups are recommended to establish a committee with representation from as many suitable bodies as may be approached. A model structure for local committees is laid down; and it is stressed that *liaison* with the provincial committee shall be maintained. The main work of the local committees is recognized as being education; and it is proposed that, through the activities of volunteer trained home economists, small classes of "leaders" shall be trained from every part of the community. The need for a carefully thought out plan for a prolonged campaign through lectures and study groups is stressed, and an outline course of six lectures on the main dietary defects believed to be common in Canadian homes has been issued by Nutrition Services. The mention of the use of posters, of well-advertised public meetings, of the radio, and of the co-operation that might be invited from restaurants and retail stores suggests that the promoters of the movement contemplate a popular campaign of some size.

It will be instructive to observe, as news comes through, how this campaign succeeds. The results of inquiry into factory canteens and cafeteria will be of import to every country that has to deal with the problems of war industry. Similar surveys in our own country, where detailed figures are still inaccessible to the general public, would also bring out useful information. We already have here a fair number of housewives' groups organized by the Women's Voluntary Services, and a few of them have taken up the study of elementary dietetics. But these occasional efforts

appear to be subject to chance interest or local eccentricity. These "patrolling activities" will be largely wasted unless they are followed up by a mass attack on the whole problem.

MEASUREMENT OF CLOT RETRACTION

Most blood clots contract on ageing, the phenomenon being known as syneresis or clot retraction. It has long been recognized that retraction may be defective in disease, and in recent years haematologists have sought methods for its quantitative measurement. Normally retraction begins as soon as the blood has clotted completely, and proceeds rapidly to a maximum. We may therefore measure either the rate or the extent of retraction of the clot. The latter is the procedure usually employed, the extent of retraction being determined by the amount of serum expressed. The conditions of observation must be rigidly standardized, in particular the calibre of the tubes, for extrinsic factors influence both the speed of coagulation and the amount of retraction.[1] In this country the technique of Macfarlane[2] is commonly followed, which makes use of a graduated centrifuge tube into which is fitted a cork bored to receive a glass rod. To perform the test, 5 c.cm. of blood obtained by venepuncture is immediately introduced into the tube, the glass rod and cork are fitted, and the tube is placed in a water bath at 37° C. One hour after a firm clot has formed the tube is taken from the bath and the clot is carefully freed and removed on the glass rod. The volume of serum is measured directly, and the result is expressed as a percentage of the original volume of blood. Macfarlane found that the normal serum volume fluctuated between 43.9% and 65.5%; he made no correction for anaemia. Since the entire bulk of the clot is proportional to the formed elements of the blood, some correction for anaemia or polycythaemia seems desirable. The simplest way of doing this is to compare the amount of serum extruded with the plasma–corpuscle ratio of the unclotted blood as determined by the haematocrit. We may call this the serum–plasma (S/P) ratio. Using this index of clot retraction, Van Allen[3] found a normal serum output in rabbits of 87% to 100%. A more difficult and less meaningful way of recording the results has been suggested by Aggeler, Lucia, and Hamlin.[4] They subtract the volume of the corpuscles from the volume of the clot and obtain a figure for the extracorpuscular volume of the clot. The mean value for this figure in man was 9.1%. However the results are recorded, it is generally agreed that clot retraction is characteristically decreased in thrombocytopenia and hypoprothrombinaemia, and it may indeed be used as a measure of the latter defect. The test is in no way specific, and low values are also obtained in pneumonia, malignant disease, and occasionally in health.

It is interesting to put up two clot-retraction tubes and observe the second at 24 hours. In health little change will have occurred, but in other cases a greater or less number of red cells will have freed themselves from the clot. Van Allen[3] was of the opinion that the quantity of corpuscles which escaped from the clot was directly proportional to the rate of retraction, and could indeed be used to estimate that rate. It would seem probable, however, that both the extent and the rate of retraction are in inverse proportion to the tendency to bleed, and Van Allen's anomalous results are probably to be explained by the fact that he exposed his clots to a good deal of mechanical strain. Certainly most workers with the Macfarlane technique would agree with Reimann,[5] who suggests that any considerable extrusion of corpuscles from the clot is an indication of a haemorrhagic tendency. Reimann speaks of this as the "escape phenomenon," and suggests that it indicates an undue readiness of the clot to break down *in vivo*. Nevertheless the sequence of events may be more complex than this. In some cases it may be found that the clot has completely dissolved again at the end of 24 hours. This is the phenomenon of fibrinolysis, which is prone to occur after trauma or operations and which is the basis of the employment of corpse blood for transfusions.[6] Fibrinolysis may be regarded as the next step after the coagulation of the blood, just as autolysis follows rigor in muscles, though not all would agree with this simile. In any event, fibrinolysis is not evidence of a haemorrhagic tendency but rather the reverse. Taylor and co-workers[7] have shown that when plasma is clotted by the addition of chloroform fibrinolysis invariably follows, and this fibrinolysis is slower in haemophilia than in health. The "escape phenomenon" may therefore be due either to friability of the clot, which indicates a haemorrhagic tendency, or to fibrinolysis, which does not. To study clot retraction completely, therefore, we should need to measure at least four things: the plasma–corpuscle ratio in the haematocrit; the volume of serum expressed at the end of 1 hour; the output of corpuscles at the end of 24 hours; and the rate of fibrinolysis as determined on the citrated plasma. None of these tests is particularly time-consuming, but it is doubtful whether the energies of the ordinary laboratory would really be well spent on measurements whose clinical and physiological bases are so obscure. In the present state of knowledge it seems wiser to regard the study of clot retraction as a research and not a routine procedure.

ORIGIN OF CHORIONIC GONADOTROPHIN

The evidence that the gonadotrophin excreted in the urine during human pregnancy is produced in the placenta has in the past been largely indirect, since the substance is only transiently excreted in pregnant monkeys and not at all in the lower experimental animals. The theory is based on the appearance of the gonadotrophin in the urine soon after the implantation of the egg and its abrupt disappearance after parturition. Contributory evidence has been supplied by studies of the amount of gonadotrophin that may be extracted from the placenta at different stages of pregnancy. One such study has been made by Bickenbach,[8] who found that the largest amount present in the placenta two to three months after the onset of pregnancy, when the concentrations in blood and urine were also maximal, was equal to 100 mouse units per gramme of placenta.

Recently, however, definite evidence that the gonadotrophin is actually formed in the placenta has come from America, where Seegar Jones, Gey, and Gey[9] have reported the formation of chorionic gonadotrophin in placental cells grown in tissue culture. Tissues cultured included 5 placentae obtained at hysterectomy in women 4 to 5 months pregnant, 2 placentae from ectopic pregnancies, 2 full-term placentae, and 2 hydatidiform moles. The supernatant fluid from the cultures was injected into 21-day-old rats, and histological changes produced in their ovaries were studied. Positive results were obtained in 20 out of 28 samples of supernatant fluid: follicle growth in 6 cases and the formation of corpora lutea in 14. There

1 Emile-Weil, P., and Periès, S., *Le Sang*, 1934, **8**, 1014.
2 *Lancet*, 1939, **1**, 1199.
3 *J. exp. Med.*, 1927, **45**, 69.
4 *J. Lab. clin. Med.*, 1942, **28**, 89.
5 *Acta med. scand.*, 1941, **107**, 95.
6 *Lancet*, 1937, **1**, 10.
7 *J. clin. Invest.*, 1943, **22**, 127.
8 *Arch. Gynäk.*, 1941, **172**, 152.
9 *Johns Hopk. Hosp. Bull.*, 1943, **72**, 26.

were positive responses in all the types of tissue cultured, and it is noteworthy that the assays were carried out when the cultures were at least 2 weeks old, by which time there had been several changes in the fluid medium and the culture consisted of several generations of new cells. The cells of all the cultures tended in time to be of a uniform type, identified as that of Langhans's layer of the chorionic villus. Gonadotrophin was demonstrated in the supernatant fluid from one ectopic chorion that had been cultured for six months, though the production of gonadotrophin generally declined throughout the culture period. The authors were not able to show that any oestrogen or progesterone was produced. Their results, however, clearly prove that the gonadotrophin in pregnancy urine is of placental origin, and amply justify its international designation as chorionic gonadotrophin (or -tropin). Incidentally the authors use the term "cyonin," which was coined by Astwood and Greep[10] and is gaining some currency in the U.S.A., though it has at present no international status.

DIMORPHIC ANAEMIA

The two best-recognized nutritional anaemias are the microcytic iron-deficiency anaemia of temperate climates and the nutritional macrocytic anaemia of tropical and subtropical zones. A fact which tends to be forgotten is that iron deficiency may complicate nutritional macrocytic anaemia, the resulting blood picture being confused and at first sight puzzling. Such cases have been observed in both India and Macedonia, and a recent report by Trowell[11] describes a large series of cases of anaemia among the natives of Uganda, many of which were found to have the characteristics of a "dimorphic anaemia." In the Tropics there is a tendency to regard anaemia as secondary to some tropical disease until it is proved otherwise. But, as Trowell points out, with modern methods of diagnosis nearly every inhabitant of the Tropics may be found to harbour an occasional malarial parasite in the blood or a hookworm in the bowel. It therefore becomes a matter of some difficulty to decide what constitutes a severe enough infection to be the prime cause of anaemia. In approaching the problem of diagnosis he considers that the first decision should be whether there is any nutritional deficiency present, then whether any disease such as hookworm or malaria is causing or accentuating the deficiency, and, lastly, what other serious conditions are present which might affect erythropoiesis. Trowell analyses his cases on these lines, and further classifies them on the basis of the values for the mean cell volume and mean corpuscular haemoglobin concentration. The colour index and mean diameter are not so useful in diagnosis, as they are frequently within normal limits in the cases of dual deficiency.

Between the two extremes of pure nutritional macrocytic anaemia and pure iron deficiency a high proportion of the Uganda cases fall into the groups "macrocytic hypochromic" and "normocytic hypochromic" anaemias. The former are all undoubted cases of dimorphic anaemia, but the latter may include a few cases of pure iron deficiency. In a typical case of dual deficiency the appearance of the blood smear is quite characteristic. Small hypochromic cells are found in the centre of the slide, forming a striking contrast with the large well-stained cells which collect at the edges and tail. Examination of the marrow shows that there is a mixed megaloblastic, normoblastic, and hypochromic type of erythropoiesis, the proportions varying according to the predominant deficiency. A therapeutic test is a simple additional diagnostic measure, a double reticulocyte response being obtained with treatment first with iron and later with a crude liver extract. Purified liver extracts are best avoided, as the response is uncertain in nutritional macrocytic anaemia. It is naturally important that any complicating disease should be treated concurrently.

Under wartime conditions it may well be that similar cases of "dimorphic anaemia" may be encountered in Western Europe; the facts assembled by Trowell are therefore of considerable interest.

[10] *Science*, 1939, **89**, 81.
[11] *Trans. roy. Soc. trop. Med. Hyg.*, 1942, **36**, 151.

THE GENUS SHIGELLA

Bacillary dysentery in man is characterized by an acute inflammation of the large intestine, and cases may be epidemic, endemic, or sporadic. Erwin Neter[1] in a review of the genus Shigella, the most important members of which cause bacillary dysentery, points out some of the gaps in our knowledge of this group of microbes. Diagnosis is made by successful isolation of the specific organisms from the stool; particles containing pus and blood are the most likely to give positive results. When immediate examination is impossible, the infective material can best be preserved in 30% glycerin in physiological saline tinted with neutral red. More recently good results have been obtained by preserving in a buffered saline solution (*p*H 8.5) containing 1% sodium citrate and 0.5% sodium desoxycholate. The successful isolation of dysentery bacilli by direct plating on desoxycholate agar is one of the greatest improvements in bacteriology in the last year or two. The Widal test applied to bacillary dysentery presents much difficulty compared with its application in the enteric fevers, and, if employed, a standardized procedure should be carefully followed with proper positive and negative controls. Therapeutic sera and bacteriophage have both been employed in the treatment of dysentery infections, but recent experience with the sulphonamide drugs indicates some of them to be particularly bacteriostatic to the dysentery bacilli. Sulphathiazole and sulphaguanidine have proved most efficacious, not only by inhibiting members of the genus Shigella but also because they are fairly soluble in water and are absorbed but slightly from the intestine. Active immunization against the disease would be of value, particularly in wartime; the formaldehyde-treated exotoxin (toxoid) of Shiga's bacillus may be worth a trial.

Several of the species of dysentery bacteria are known under a variety of names, a fact which often leads to confusion. The following members of the genus Shigella are recognized as pathogenic to man: *S. dysenteriae* (Shiga bacillus), *S. schmitzii* (Schmitz bacillus), S. sp. (Newcastle type), *S. paradysenteriae* (Flexner bacillus), and *S. sonnei* (Sonne bacillus). There is increasing evidence that *S. alkalescens* is pathogenic to man. A primary subdivision of Shigella is best obtained by classifying its members according to their action on lactose and mannitol. Group I consists of lactose-negative, mannitol-negative types, including the type species of the genus, *S. dysenteriae*. The only other pathogenic member of this group is *S. schmitzii*. The former organism is indole-negative, forms an antitoxin, and is antigenically distinguishable, in these ways differing from the latter. *S. paradysenteriae* is the chief member of the second group—lactose-negative, mannitol-positive types. This genus is characterized by its members undergoing bacterial dissociation, and each species having several antigenic types; *S. paradysenteriae* (Flexner bacillus) is the chief offender in this respect. Boyd has added considerably to our knowledge of the antigenic

[1] *Bact. Rev.*, 1942, **6**, 1.

make-up of this group by the demonstration of a group-specific antigen. The old biochemical subdivision of Flexner types on the fermentation of maltose and sucrose should be abandoned, as it bears no relation to antigenic types. *S. alkalescens*, another member of this group, is distinguished by fermenting dulcitol and xylose and producing an extremely alkaline reaction in litmus milk. The fact that certain members of the genus are late lactose fermenters was apparent long ago, but it was not until 1915 that Sonne proved conclusively that such an organism could produce clinical dysentery in man. Late fermentation of lactose is due not to a slow utilization of the carbohydrate but to the appearance of lactose-fermenting daughter colonies.

The rapid differentiation of Flexner from Sonne often presents difficulties, as the fermentation of lactose by the latter may require several days or weeks. Usually, however, colonies of Sonne, appearing first as yellow on solid media, soon turn pink to red after 24 to 48 hours' incubation; the smooth Sonne colony is said to be more convex than the Flexner colony. Both soon undergo dissociation to rough forms. The fermentation of rhamnose is said to aid in their differentiation; Sonne's bacillus produces acid in 24 to 48 hours, whereas strains of Flexner fail to do so, or do so only after prolonged incubation. The differential diagnosis of Sonne from Flexner infections by agglutination tests may be difficult owing to an antigenic relation between the two organisms, particularly if rough forms are encountered. *B. dispar*, first described by Andrewes, is identical with *S. ceylonensis* and *S. madampensis* of Castellani. These organisms are included with *S. sonnei* and are differentiated by being indole-positive. There is no conclusive evidence as yet to indicate that these organisms cause dysentery. These strains could be included in a single species—e.g., *S. castellanii*.

Many species of the genus have been studied comprehensively, but knowledge of the other species is lacking, and competent investigators should collect and study strains of these little-known varieties and identify the accuracy of the strains, reconsider their taxonomic position, and determine their pathogenic significance. Again, with the exception of Shiga's bacillus, little is known as to why one species may cause epidemic outbreaks of dysentery whilst a very closely related species does not. Further investigations are required on this basis as well as chemical analysis of their antigenic components.

AN APPEAL FOR BACK NUMBERS

Members who do not preserve the *Journal* for binding are invited to send their copies (preferably in bulk) to B.M.A. House, Tavistock Square, W.C.1, addressed to the Secretary of the Journal Board. The cost of carriage will be repaid. There is a constant demand for back numbers, and each issue goes quickly out of print; hence any spare copies published during the war will be welcome. The steady growth in membership to a figure well above 43,000 has increased the circulation of the *Journal* by 12% in the past four years, because every new member must have his weekly copy. Meanwhile there has been a very severe and progressive cut in the amount of paper allowed to be used for printing. Every means of economizing space has been adopted in order to make the paper ration go as far as possible, and nothing more can be done except to reduce the number of pages still further. A member who returns his copies at any time after reading them will in that way put them back into circulation through the Head Office. If the response to this appeal is widespread the help thus given will be very material at a time of great and increasing difficulty.

CHILDREN IN BONDAGE

The Save the Children Fund, founded in England after the 1914-18 war, to bring relief to the suffering children of Europe, made a most important contribution to European recovery. Its founder, Eglantyne Jebb, received less recognition than was her due for her self-sacrificing devotion to child welfare. The subsequent creation of the Save the Children Union linked together the national child welfare associations of 27 States and did much to stimulate increased activity in this vitally important branch of public health and endeavour in many of its constituent countries. The Save the Children Fund has set up a committee to study the problems of post-war reconstruction in Europe in its own special domain. The report *Children in Bondage: Child Life in Occupied Countries*[1] has been prepared for the use of that committee. It contains such information as was available up to June, 1942, regarding conditions of child life in the occupied countries of Europe, with the exception of the occupied portions of Soviet Russia, and in Finland. It further provides some information regarding economic and health conditions generally in these countries. All this information is of necessity fragmentary and disjointed. Such vital statistics as the report contains are for the most part bereft of significance by the absence of other essential data. Moreover, conditions are constantly changing, and in the main, unfortunately, for the worse. In spite of this the small volume is a useful reminder of the extent to which the continuation of the war is sapping the vitality of the rising generation and of the nature of the formidable problems that await us in this vitally important aspect of post-war reconstruction. The most informing chapter of the report is that devoted to Finland, which contains information collected by Dr. Hercod during a visit to that country early in 1942. In the chapter on Greece the national child welfare organization, whose work receives appreciative recognition, is called the Patriotic Institute; the Patriotic League is its usual appellation.

THE R.S.M. IN WARTIME

At the recent annual meeting of the Royal Society of Medicine it was announced that the membership of the Society is now just over 6,000, the highest level it has ever attained, and marking a 50% increase within the last fifteen years. No. 1, Wimpole Street is nowadays a very active centre. The meetings of the Society during the past year have been larger in number and better attended than ever, and the Barnes Hall has often been crowded out. In the annual report 55 set discussions which have taken place in the various Sections are listed. Many of these, which have been briefly reported in these columns, have had a close practical application to medical service in wartime, both in the military and in the civil field. The Society has given hospitality to members of the medical services of the British, Dominion, and Allied Forces, and many of the discussions have been enriched by contributions especially from United States and Canadian colleagues. Two distinguished medical men of the United States, Dr. Thomas Parran and Dr. Hugh Young, as well as Prof. A. T. A. Jurasz of Poland, have been elected honorary Fellows. Inter-Allied conferences on military medicine have also been arranged for the benefit of the fighting Forces, the discussions taking place in private. Committees of the Society are now dealing with the subject of interned medical aliens, with education in oto-rhino-laryngology, and, in collaboration with the Royal Medico-Psychological Association, with the future of psychiatry in all its branches.

[1] Longmans, Green and Co. (3s. 6d.)

POSSIBILITIES OF RESEARCH IN SENILE DISEASES*

BY

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The scope and opportunities for systematic study of and research into diseases affecting the aged are limitless. According to the Life Insurance Underwriters' Association, it is estimated that in 1945, 1 in 8 of the anticipated population of the British Isles will be over the age of 60. Since unemployed elderly men are dependent upon State aid, it is of interest to the State to encourage investigation of diseases peculiar to age and to extend preventive medicine to this field. At present the attitude of both the public and the profession towards the aged and their ailments is negative. Arteriosclerosis, arterial hypertension, cardio-respiratory disorders, nephritis, cancer, diabetes, and arthritis continue to rise. There are books, journals, societies, and University chairs devoted to other special branches of medicine, but, apart from small organizations interested in particular homes for the aged, there is no general or professional body concerned with disease affecting the aged. Special courses or at least lectures should be included in the curricula of medical schools. Clinics should be established, where necessary with adequate laboratory facilities, if knowledge of the normal retrogressive alterations in the anatomy and physiology of the aged is to be developed. In America a research unit has been established under the Federal Health Department to study human clinical problems of ageing and of diseases characteristically associated with advancing years and which involve the mental as well as the physical changes of senescence.

Heredity is probably the capital factor in longevity and the maintenance of a healthy old age. In order to assess heredity as a causative factor in premature degenerative changes, periodic examinations are necessary, since they lead to the discovery of disease tendencies and correction of errors in the mode of living. If a patient's father died of nephritis or his mother of cerebral haemorrhage in the early sixties, a regimen tending to prevent arterial hypertension should be advised. If there is a positive family history of diabetes (and there is believed to be a hereditary factor in 25% of cases) an ageing patient should have "urinalysis" done every three months and blood-sugar estimates or glucose-tolerance curves twice yearly. Heredity is probably the most important aetiological factor in coronary artery disease, the greatest number of deaths from which occur between the ages of 62 and 74. The same applies to hypertension and obesity.

The Actuarial Society of America has shown that at the age of 55, 20% overweight means 25% higher mortality. As obesity in old age is often associated with diabetes, degenerative cardiac, arterial, and articular diseases, and gall-bladder pathology, it is important to pursue investigations into causative factors. The basal metabolic rate is often lowered in obese persons; but this does not signify thyroid deficiency, and thyroid medication is unlikely to succeed in weight reduction. It is now believed that the hypothalamus contains a fat-regulating centre and that there is abnormal irritation of this centre, where feelings of hunger originate an increase of appetite in the absence of exercise, occupational activity, etc.

Study of Subjective Symptoms

There is an immense field for the modification of the clinical descriptions of the various diseases and syndromes as they affect persons of age. In the pre-disease period there are no specific symptoms except a feeling of ill-health, uneasiness, apathy, unexplainable fatigue, and loss of appetite. These subjective symptoms call for a study of the organism as a whole, a complete inventory of the body systems and nutrition, and a synthesis of the data so obtained. Thorough practical laboratory investigations of such elderly people will eventually succeed in detecting the onset of senile diseases, prolonging the duration of their usefulness to the community, and maintaining their will to live and their self-respect.

Rolleston aptly stated that in old age the organs suffer in silence. In the aged, pain is not a safe clue. Owing to diminished nerve sensibility and excitability there may be appendicitis, peritonitis, or strangulated hernia without much pain. Pneumonia may exist with little pain in the chest and little if any rise of temperature or pulse rate. Such patients may be just drowsy, apathetic and prostrate, or restless. Chills are rare at the onset of such acute infections as influenza, pneumonia, or pyelonephritis. The onset of diabetes may be insidious and almost invariably without typical symptomatology. Mild forms with intermittent glycosuria and hyperglycaemia may be of several years' standing, with the patient feeling well, and yet may suddenly become acute, requiring rigid diet and insulin. Hence the importance of glucose-tolerance tests in the aged person with glycosuria, so instituting earlier control, but using a higher blood-sugar figure as the normal physiological basic level.

Investigation into Various Complex Conditions

If the complex conditions which determine arteriosclerosis and its sequelae, cerebral haemorrhage and thrombosis, coronary artery and renal disease, and peripheral gangrene were investigated more thoroughly, it would lead to the discovery of the main causative factors of senility and premature senility with their attendant incapacity. We are aware of the roles of heredity, infectious illnesses, disorders of metabolism, nutritional imbalance, mode of living, etc., but the actual mechanism remains a mystery. To diagnose arteriosclerosis at an early stage remains difficult. Palpation of vessels, examination of ocular fundi, *x*-ray examinations of chest and extremities, and blood-pressure estimations are not enlightening enough.

It would seem that the approach by thorough blood cholesterol studies is the most helpful at the moment. By feeding cholesterol to rabbits, atheromatous changes in the heart valves and in the intima of the great vessels have been produced. At the age of 45 it may be permissible to try a low-cholesterol diet and desiccated thyroid if hypercholesterolaemia is present, supplemented by the usual measures of correction of overweight, adequate rest periods, avoidance of fatigue, undue excitement, and strain.

Arterial changes are associated with an increase of cholesterol esters in the blood. The possibility of controlling the blood cholesterol through diet is being acted upon. Hypercholesterolaemia is constant in myxoedema. The cholesterol–cholesterol-ester ratio is abnormal in diabetes and obesity, and if the B.M.R. is normal in these conditions and the blood cholesterol high, marked improvement occurs when small doses of desiccated thyroid and a low-cholesterol diet are given.

Occasionally very low blood-pressure values are found in apparently healthy old people. Blood-pressure readings should be taken and charted as are T.P.R., as they vary after a meal, from day to day, from month to month, and from year to year. It is not unusual to find patients who have had an increase in blood pressure over a period of years, and whose blood pressure has become normal again without treatment when they reach the ages of 70 and 75. However, as a prophylactic measure, the cardiac and renal functions should be assessed in every hypertensive. Some observers regard endocrine imbalance as a cause of hypertension, but there is no definite evidence to justify this belief. Goldblatt's experiments in the production of hypertension by clamping the renal vessels and of renal failure by occluding the renal artery promise to shed light on the aetiology of hypertension and its relation to nephritis. Many attempts to detect a pressor substance in the blood plasma which could reproduce the vasopressor state in either animals or men are being made.

Diagnostic Tests

It is necessary to estimate quantitative degrees of renal impairment in treating almost any organic disease in old age, including cancerous conditions of the alimentary tract, pelvic tumour, and arteriosclerotic gangrene requiring surgical intervention. While there is a choice of laboratory investigations for this purpose, no single one of them by itself is reliable, and

* Read to the London and Home Counties Branch of the Medical Superintendents' Society, Feb. 13, 1943.

there is still scope for a renal function test to enable a surgeon to decide on the proper pre-operative preparation and the type of operation. In old age leucocytes and casts are frequently present in urine, often in large numbers, without in any way being pathological.

Various tests for hepatic function are being used, but hitherto none have commanded the confidence of the clinician. Yet it is important from the point of view of pre-operative measures and scope of operation to have a quantitative estimate of the degree of liver damage associated with gall-bladder disease or obstructive jaundice. In such cases, cholesterol esters may disappear from the blood and reduction of hippuric acid will show the degree of damage to hepatic cells.

A clinical diagnosis of chronic myocarditis or myofibrosis should not be made. These labels do not present a picture which can be proved clinically or radiologically. It is only when coronary disease or angina of effort is present, and confirmed by electrocardiographic examination, that it is possible to make a diagnosis which can be substantiated. Heart disease in old age in the absence of valvular disease and renal defect is generally arteriosclerosis of coronary arteries. Since it is difficult to diagnose myocarditis one has to depend upon a study of the function of the heart by its reaction to ordinary physical activity. It is rather discouraging to find that when an elderly patient dies from cardiac defeat after operation necropsy may fail to show any change which would logically account for the condition.

Gastric Disturbances

Absence of gastric acidity increases with age. In a series of 110 elderly people there was absence of free HCl in 66 who were apparently in good health; 76 of the 110 showed signs of atrophic gastritis, demonstrated gastroscopically with diminution or absence of free HCl; but only 14 of these had mild discomfort, while the remainder had good appetites and tolerated their food well. The Hb in this series was frequently diminished, and 24 had red cell counts between 2,900,000 and 3,800,000 per c.mm. Hence hypochlorhydria is common in old age, and is probably dependent on a symptomless atrophic gastritis. Similarly the proteolytic, lipolytic, and amylolytic enzymes are normally diminished in persons of advanced years. Peptic ulcer is common between the ages of 55 and 79, cancer of stomach between 50 and 79. Gastroscopy and *x*-ray examination following an opaque meal are the most accurate aids to diagnosis. Many persons manifest the first evidence of peptic ulcer after the age of 60.

Achlorhydria increases in incidence as the years advance, and may precede definite anaemia or cancer by several years. It is not uncommon to discover the first symptoms of pernicious anaemia at 75 or 80 years of age. Every patient complaining of a "weak heart" or symptoms pointing to disturbance of the nervous system must be investigated with pernicious anaemia in mind, although diabetes, myxoedema, or nephritis may be present also, double pathology being quite common in senescence.

It is commonly stated that pernicious anaemia is rare in old age. The majority of cases now seen are in the age period 65–79. If blood counts were done as a routine many more cases would be discovered. Physicians have neglected to look for pernicious anaemia in the aged because they have been taught that it is a disease of middle life.

Defective Nutrition

We have all seen persons who are unable to make the effort to venture out in inclement weather to obtain their rations, with the result that they are admitted to hospital in a cold, wasted, asthenic, and neglected condition or perhaps in coma and with an intercurrent infection, feeble and shallow respiration, and a pellagra-like dermatosis. The response to the forcing of a balanced diet and parenteral vitamins is dramatic. The debilitated and depressed condition of many persons of advanced age and their vulnerability to infection may be traced to defective nutrition if a review is made of their daily intake, especially in respect of vitamins, minerals, and caloric value. The aged, often faddy in their likes and dislikes, are unlikely to have the necessary variety in their meals, because this entails partaking of certain foods to which they have never been accustomed. The condition, too, may be aggravated by defective absorption from the alimentary tract and by defective utilization.

Thrombophlebitis is a fairly common condition in the aged—especially in those who are confined to bed for any reason, in the obese, and after operation. It has been shown that the interruption of vasoconstrictor impulses with procaine by infiltration of sympathetic ganglia brings about a normal interchange of intravascular and perivascular fluids. There follows rapid relief of pain and oedema, and fever soon disappears. As with coronary artery and cerebral thrombosis, heparin may be used prophylactically, but the prohibitive cost prevents its general use. Vitamin K has not proved efficacious in the thrombotic conditions of the aged.

Future Possibilities

The future may hold the possibility of using endocrine therapy for prostatic enlargement. Periodic medical examinations with routine attention to the prostate gland will reveal many incipient hypertrophies. Oestrogens, androgens, and gonadotrophins have been tried, but results are not convincing. Much work remains to be done before the possible relationship of the endocrines to prostatic hypertrophy can be visualized. In the meantime, earlier detection of prostatism favours transurethral resections, the mortality rate of which at the Mayo Clinic is 1%, while delay and neglect mean prostatectomy, the risk depending upon the state of the cardio-renal-vascular system and the lungs, and the presence of infection.

Space does not permit me to refer to the preventive measures or the investigations which might be pursued with advantage in elderly patients with incipient impairment of hearing and vision. There is an immense scope for research into the cause and prevention of progressive degeneration of the lungs and the cardio-respiratory complex. Much is to be gained by focusing attention upon the appropriate housing and hospital conditions required by the aged to minimize accidents and to maintain optimum health and usefulness.

Nova et Vetera

THE VIENNA SCHOOL

To medical students at the beginning of this century study abroad was alluring; one envied those lucky enough to be able—not always with solid reasons—to record in the *Medical Directory* the names of foreign universities in which they had continued their studies. Whether the goal were clinical or laboratory study, the chosen schools were, in a great majority of instances, situated in Germany; the names of Vienna and Paris occurred fairly often, Leyden rarely, Padua hardly ever, if ever. If one turns the pages of Munk's *Roll*, which gives a picture of the educational habits of three centuries of English experience ending rather more than a hundred years ago, we see first the lure of Italy and France and then the attraction of Leyden, which throughout the 18th century attracted a considerable majority of the young British physicians who studied outside these islands. The attractiveness of a foreign school is the resultant of several components, of which accessibility and the reputation of its teachers are the most important. Leyden in the 18th century had both merits; Boerhaave was a great teacher, and after his death his tradition continued. A decreasing resort to foreign universities at the end of the century was due partly to the increasing reputation of our own schools, partly to war, and possibly to the decay of Latin as an international means of communication. When, in the 19th century, foreign study revived, it was purely postgraduate education.

The distinguished historian of medicine, Dr. Max Neuburger, has published a monograph on the Vienna School and its contacts with British medicine which will interest all readers and recall pleasant memories of some senior colleagues.[1] It

[1] *British Medicine and the Vienna School: Contacts and Parallels.* By Max Neuburger, M.D., Ph.D. (Pp. 134; illustrated. 10s. 6d.) London: William Heinemann. 1943.

is usual to speak of two periods in the history of the Vienna School, approximately a hundred years apart, as golden ages. After the death of Boerhaave, his disciples van Swieten and de Haen were shining lights of the "old" Vienna School. Boerhaave, an enthusiastic admirer of our Sydenham, had immense influence in spreading the Hippocratic methods which Sydenham's clinical genius had quickened; van Swieten and de Haen carried on the good work in the metropolis of 18th-century Germany. It is not likely that many Englishmen studied in the old Vienna School, but Prof. Neuburger illustrates the spiritual affinities of the best British thought with the Viennese teaching. This mutual influence persisted over more than a century.

Of the many hatreds corrupting the soul of Adolf Hitler, a loathing of imperial Austria was not the least. No doubt the principal motive was personal, but it is possible that a dim perception of the good side of old Austria had its part. The Austrian Government often treated vassals with the Teutonic brutality which Hitler might naturally praise, but undoubtedly Vienna was, down to our own day, a civilized capital city, and its intellectual society had an urbanity and respect for the work of other nations which have never been conspicuous in North Germany. The successors of van Swieten and de Haen, in particular Stoll and Johann Peter Frank (whose thought was much influenced by the writings of John Brown), worthily carried on the tradition; and Richard Bright, who visited Vienna in 1814, gave a glowing account of the teaching, mentioning Beer's instruction in ophthalmology, which William Mackenzie described in more detail a few years later.

Prof. Neuburger remarks that one of the most significant achievements of the old Vienna School Auenbrugger's researches on percussion, had small honour in its author's day in Vienna and was brought to the notice of the world by Corvisart and Corvisart's pupil Laennec. After the time of Frank the fame of Vienna waned and Paris attracted a majority of foreign postgraduate students for a generation; accessibility and a succession of brilliant teachers provide a sufficient explanation. But this was not the end. A great clinician, Joseph Skoda, and a great pathological anatomist, Karl Rokitansky, appeared, and the new Vienna School was born. In the early and mid-Victorian period, the zenith of the new Vienna School, the liaison between British and Austrian medicine was close; not only did Rokitansky take great interest in the British literature of pathological anatomy—which, in some points, anticipated his own conclusions—but colleagues such as Hyrtl the anatomist, Brücke the physiologist, and Hebra the dermatologist were well acquainted with English work in their fields. The classical work of Semmelweiss—whose treatment by the Vienna faculty did it little honour—attracted much favourable attention in our country. At that time a succession of brilliant ophthalmologists and other specialists were responsible for teaching which earned a reputation assuring a steady flow of foreign students. Indeed, efficiency in special teaching continued to draw students after the general reputation of Vienna as a medical school had been eclipsed by the fame of teachers in North German schools. Felix Semon, who studied in Vienna in 1874, spoke in high terms of the teaching, although he found something to criticize, especially "the want of human feeling shown in the various clinics. In Hebra's skin clinic that indifference occasionally increased to sheer brutality. . . . In Vienna hospitals the patient was merely regarded as 'material.' The poor sick submitted to this with a dull resignation which surprised me at first as much as the want of sympathy of some of their medical attendants."

The primacy of Vienna was over before our younger generation were old enough to be graduates, but the names of Wenckebach and von Pirquet are familiar even to the young. In general one may say that the intellectual sympathy between the English and Viennese Schools was due to a respect for rational empiricism and a distaste for theoretical systems—a Hippocratic rather than Galenical attitude, which the great teachers of both adopted. Vienna is now submerged by a tidal wave of barbarism, but it is not fantastic to expect that the dark waters will recede sooner in Southern than Northern Germany. Vienna has been, what Berlin never was, really cosmopolitan; she may be again.

M. G.

NEW ZEALAND

[FROM OUR CORRESPONDENT IN WELLINGTON]

Advertising of Medicines

Regulations dealing with advertisements of medicines have been gazetted by the Minister of Health, who explained that they were framed at the request of the board set up under the Medical Advertisements Act passed last year. The board had settled details at a number of preliminary meetings, and would now be in a position to put into operation the provisions which it, as a body of experts, had recommended to the Government.

The main effect of the regulations is to prohibit any claim in medical advertisements (1) to diagnose, prevent, alleviate, treat, or cure a large number of diseases or disorders (including alcoholism, cancer, diabetes, female irregularities, pleurisy, pneumonia, sexual weakness, tuberculosis, and venereal diseases); or to prevent or cure asthma, gout, influenza, obesity, haemorrhoids, or pyorrhoea; (2) that any article or mode of treatment is used or recommended by doctors or other professional men or bodies, with the exception that reference may be made to a named doctor registered in some part of the British Dominions; (3) that any article or mode of treatment is a universal panacea or infallible in its action; or any claim (4) that is false, indecent, or expressed in offensive terms; (5) that, in so far as it relates to therapeutic value, is not based on the advertiser's honest and reasonable belief; and (6) that is intended or likely to mislead or deceive, or to suggest the fear of serious consequences from trivial complaints.

No medical advertisement may invite public correspondence for diagnosis or consultation, nor may it refer to any testimonial for which payment or other consideration has been given. A warning against use without medical advice must appear in every advertisement relating to glandular preparations, and advertisements accompanying preparations containing or purporting to contain a dangerous drug or poison must name the drug or poison and state the proportion present and the maximum adult dose. Recognized pharmaceutical names of drugs must be used in advertisements, and any drug not referred to in standard pharmaceutical works and possessing no recognized botanical name must not be mentioned. Every medical advertisement accompanying any article is to contain specific directions for use.

The board has power to grant exemption from some provisions of the regulations, but not from (1) or from the provisions relating to poisons and dangerous drugs or to the names of drugs. The operative parts of the regulations came into force on Aug. 1, 1943, and in order to give holders time to dispose of made-up packages a further period to Nov. 1, 1943, is allowed in respect of advertisements on or attached to an article or its container. Advertisers who, at the time the regulations came into force, held a stock of advertising material which offends against the provisions relating to the naming of drugs and to preparations containing dangerous drugs or poisons are permitted to continue using it for 12 months thereafter.

The intention of the Act is admirable, and no doubt any defects can be remedied as the result of experience. It does not, however, seem proper to authorize the names of registered doctors in advertisements. Also, the fact that a medicine is approved by a Government board appears to give it official sanction and so greatly enhances the value of the advertisement.

Speaking at the annual meeting of the British Hospitals Association, the Minister of Health (Mr. Ernest Brown) said he had been encouraged by the obvious desire of hospital representatives to work out proposals for an efficient service and by the spirit of give and take which had prevailed. The discussions which had taken place so far had served to make it clear that no onslaught was being planned against the voluntary system; this was a complete misconception. The Government's policy was, and always had been, to make the fullest use of voluntary resources in any post-war hospital service. Changes would be necessary, and if we were to have an integrated and comprehensive hospital service we should have to learn to give up some of our lesser liberties of the past in order to enter into the greater freedom represented by that service. We could not find room in such a service for an independence which was really a disguise for selfish ambition, or a liberty which was really licence.

RADIUM COMMITTEE OF THE KING'S FUND

The Radium Committee of King Edward's Hospital Fund for London, which was first appointed in 1939 and to which there have been references in the last three annual reports of the Fund, has now issued its first general report. The committee has been principally concerned with such matters as wartime precautions in the use of radium, emergency radiotherapy centres, a consultant panel of physicists, organization of radiotherapy in London, and the King's Fund radium pool.

Precautions in the Use of Radium.—One of the committee's first tasks was to see that steps were taken to safeguard radium and to avoid the danger that might be caused to the general public through its dispersal by high explosive. On the outbreak of war, therefore, all the radium was deposited in deep boreholes. Later, however, safeguards were devised which have allowed much of the radium to be withdrawn and put into use. This problem has taken up a great deal of the committee's time, and it has kept in touch with the Radium Commission, which had to deal with the same problem in the Provinces. Following a joint recommendation by these two bodies the Ministry of Home Security issued a pamphlet on the precautions to be taken by all holders of radium.

Emergency Radiotherapy Centres.—The recommendation of the committee and the Radium Commission that special emergency centres should be established for such target areas as London where radiotherapy could be carried on in greater safety was accepted by the Ministry of Health. A scheme was agreed and arrangements made to set up two centres, one of which is now in operation while the other is expected to be ready soon.

Consultant Panel of Physicists.—As a result of the committee's efforts a panel of physicists has been established, which will assist hospitals that have no physicist on their staff and help them to maintain a good standard of technical efficiency. The panel consists of the physicists with the members of their departments from the Medical Research Council and the Middlesex, Royal Cancer, St. Bartholomew's, and Westminster Hospitals.

Organization of Radiotherapy in London.—The committee has expressed its agreement in principle with the views of the Radium Commission on the need for team work in the treatment of cancer and on the requirements of an efficient radiotherapy centre. It has told the Joint Co-ordination Committee that it considers that radiotherapy in London should, subject to the requirements of treatment and teaching, be concentrated at certain of the existing centres attached to general hospitals, and these centres developed by expansion of the staff, equipment, and number of patients served.

King's Fund Radium Pool.—The service of the pool was suspended for some time on the outbreak of war, but it has been gradually resumed. It is still operating on a reduced scale only, and has consequently required less transport.

NEW SALARIES FOR MIDWIVES

The preamble to the report of the Rushcliffe Committee on Nurses' Salaries (*Journal*, Feb. 27, p. 264) stated that a separate committee, also with Lord Rushcliffe as chairman, was considering midwives' salaries. The latter committee has now reported,* and its chief recommendation is that State-certified midwives shall be paid according to national salary scales. In making this recommendation the committee has been mindful of the need for making the midwifery service attractive enough so that young midwives will not leave it for nursing. Some of the salaries suggested are as follows:

	Annual Salary	Total Value of Salary and Emoluments
Matron: Training institution (50–99 beds)	£275, rising by £25 a year to £400	£425–£550
Assistant matron: 50 beds or over	£230, rising by £10 to £290	£350–£410
Superintendent midwife: Training institution	Range of £240–£340	£360–£460
Midwifery sister: State-certified midwife and State-registered nurse	£150, rising by £10 to £200 (plus £20 after ten years' service in grade)	£250–£320
Staff midwife: S.C.M. and S.R.N.	£120, rising by £5 to £160	£210–£250

A pupil midwife who is already a State-registered nurse is to receive £65 a year during training (in addition to emoluments worth £75), and a pupil midwife who is not a trained nurse £40 for the first year, £45 for the second, and £60 during the second period of training. As regards domiciliary midwives, a district midwife who is non-resident and who is also a State-registered nurse is to receive an annual salary of £270, rising by £10 to £360; while one who is not a State-registered nurse will receive £250, rising by £10 to £350.

The committee next recommends that in future midwives should have a uniform, and that the Central Midwives Board should be given power to make rules regarding the uniform, and that it should be an offence for other than State-certified midwives to wear it. It is thought that a uniform will contribute to the public standing of midwives, who bring into the world 400,000 of the 600,000 babies born each year, and act as maternity nurses under doctors' instructions in most of the remaining confinements. The report gives a reminder that midwifery has its own traditions; it is a closed profession, the title of "midwife" being protected by law and unqualified practice being illegal.

Other recommendations are that institutional midwives should work a 96-hour fortnight, have not more than six months' continuous night duty (two months for pupil midwives), free uniform, and one day off duty a week. For domiciliary midwives local authorities should establish more district hostels, or in suitable areas provide furnished houses or unfurnished rooms or lodging and attendance; they should also provide professional equipment and stationery, medical supplies, uniform and professional laundry, and should maintain a telephone. All midwives, except pupils, whether institutional or domiciliary, should have 28 days' annual leave with pay. The report also recommended that the practice of charging fees to pupil midwives should be discontinued. Of the shortage of midwives it says the number who complete training would be sufficient to meet demands if they all continued in the service, but the wastage is high. Out of some 65,000 women on the roll only about 16,000 are practising. The wastage has been aggravated by the war, because many midwives with the double qualification have turned to nursing.

(The Rushcliffe report applies only to England and Wales; recommendations concerning the salaries of midwives in Scotland appeared in the report of the Taylor Committee (*Journal*, Feb. 27, p. 264, and May 29, p. 668).)

* Cmd. 6460. H.M. Stationery Office. (6d.)

PROTECTION FOR THE PRACTITIONER

Sir Robert Hutchison, who presided over the annual meeting of the London and Counties Medical Protection Society in the absence through illness of the president, Sir Cuthbert Wallace, said that every member of the medical profession from the beginning of his career, whatever position he held, should be a member of a defence society. The importance of this was not lessened by the possibility of a State Medical Service. It might be that there were newly qualified men who were neglecting to join such a society in the belief that as servants of the State no action could lie against them for malpraxis. The London and Counties had had to defend its members who were serving in the E.M.S. or in the Forces or were employed by local authorities. If a State Medical Service came in there was no reason whatever to suppose that a doctor would not still be liable for his actions as a professional man. Sir Robert also said that it would be a great advantage to the society in defending its members if they kept careful records. On many occasions, owing to pressure of work, especially in wartime, doctors failed to keep records, and this made the handling of cases on their behalf much more difficult. Another point that constantly cropped up was the importance of a radiograph when there was the least suspicion, particularly of fractures. The reasons for not taking a radiograph were understandable and even creditable to the doctor, in that he wished to save his patient expense and fatigue, but it was necessary to have the record. The importance of accurate certification had again been emphasized. Laxity in this respect might involve a member in trouble and the Society in considerable expense.

The Society in its fiftieth year is in a very flourishing condition. Mr. W. M. Mollison, the treasurer, said that during last year it recruited a record number of new members (1,349), and the excess of income over expenditure was £6,000, of which £4,000 goes to the accumulated funds and £2,000 to an investment depreciation reserve. The number of applications for advice and assistance from members was nearly one thousand. The officers were re-elected, and votes of thanks were accorded to them and to the staff for their services during the year.

J. A. Dillon and L. R. Evans (*Ann. intern. Med.*, 1942, **17**, 722) illustrate the rarity of primary amyloid disease by the fact that of 120,785 admissions to the Peter Bent Brigham Hospital, Boston, and of 41,551 necropsies there were 23 of amyloid disease, of which only 3 were found to be primary. One of these simulated sclerotic coronary artery disease with heart failure, a second terminated in subacute bacterial endocarditis, and the third showed the symptoms of the nephrotic syndrome.

Correspondence

Health and Social Medicine

SIR,—May I express approval of your leading article on health and social medicine (Aug. 7, p. 174) and, incidentally, disagreement with the letter of Dr. J. Shackleton-Bailey (p. 181) with its pseudo-realistic outlook. It is not the duty of the medical profession to bow to ill-instructed popular clamour any more than it is—as he seems to think it is doing at the moment—to fight for its own privileges. The doctor's duty is to speak and act as he thinks right without fear or favour, and his privileged position has been freely accorded in the past to ensure that his opinion should be free from outside pressure. The Beveridge report seeks to undermine this position in order to transform him into a minion of the State.

The more one considers the Beveridge report and its implications the more one is forced to the conclusion that it is really conceived in plausible ignorance of what doctors can do. As things are they can do relatively little to reduce sickness absence compared with those environmental factors to which your leader alludes and which have been stressed in various letters to the *Times*. Their ability to act like policemen to prevent the abuse of sickness benefit funds is even more limited. For years doctors have tried to do their best, but when I attended a meeting some while ago which discussed, *inter alia*, industrial sickness absence, we had evidence to show that in the case of those firms which continued to pay some of their employees (the most reliable and responsible ones, but not of the black-coated class) their wages when off sick, the sickness-absence rate in this class was no less than two and a half times that of the other employees. Considering all the facts one can only come to the conclusion that these employees—who were obviously least likely to malinger—were really the only ones who stayed off long enough to get thoroughly fit. All the others were forced back to work by financial stringency due to the miserable N.H.I. allowance rather than through real physical fitness. This opinion is supported by the way that sickness absence has increased greatly since higher wages have diminished financial stress, in spite of the urgent need for workers to get back to work. The Government actuary, in the Beveridge report, realized that the increased benefits offered might lead to increased sickness claims, and, in the absence of any official figures, he suggested the moderate increase of 12½%. Industrial experience suggests that this figure should have been more like 150% (making a total of 250% compared with pre-war figures). Furthermore, industrial experience does not support the view that financial comfort diminishes sickness absence, nor does medical experience suggest that doctors will be able honestly to diminish it either. For a long time I have realized that many of my N.H.I. patients were going back to work before they were medically fit, and as a doctor I should rejoice to see the length of sickness absence increase for many of them.

If this is true, and I think it is, both the finances and Assumption B of the Beveridge scheme are seen to need very considerable revision, for Assumption B is asking of the medical profession something that it is quite powerless to give without losing its status of being composed of honest physicians instead of time-servers. We may offer a "flea-bite" to offset the 250%, but that is all. A disturbing thing about the Beveridge report is that it can only function in a world at peace, and yet, for the preservation of that peace, we seem destined for many years to have to exercise, as a nation, just those qualities which the Beveridge report tends to lull to sleep in the individual. This paradox may be resolvable, but at least it should be squarely faced. Personally I find very little enthusiasm for Beveridge among my patients. Many of them realize subconsciously what the report says of itself, that it is an attempt at revolution—"A revolutionary moment in the world's history is the time for revolutions, not for patching" (para. 7). Many of us think that wartime is about the unwisest time of all to attempt a revolution of such social complexity and significance, especially when those most likely to be affected are unable to take any part in enacting it. If the doctors can call a halt until the matter has been more fully considered in all its implications we shall have justified our existence as custodians of sanity as well as of health.

There is another passage in the Beveridge report, in paragraph 440, which is never quoted, although it is perhaps the most important of all. It says: "Fourth and most important, income security, which is all that can be given by social insurance, is so inadequate a provision for human happiness that to put it forward by itself as a sole or principal measure of reconstruction hardly seems worth doing." The key to happiness and healthy living is not more doctors, or regimentation of or by the doctors or the State, but in developing a healthy community spirit and paying attention to those physical, environmental, social, and spiritual factors which promote health or predispose to disease.

I should perhaps add that I am heart and soul in favour of social advancement. But a scheme which has been put before the public so much as "get" instead of "give," emphasizing rights rather than duties, is bound in the long run to lower the temper of our living and increase selfishness and therefore misery. There must be a community before rights can be exercised, so social obligations must be admitted before social rights can be claimed. This is not overlooked in the report, but it has been obscured by the blaze of publicity with which it has been accompanied.—I am, etc.,

W. N. LEAK.

Responsibility and Freedom

SIR,—I must admit that one of the reasons for my claiming a few lines of your space is that I do really believe we are in danger of losing what the letters to the *Journal* most especially symbolize—the free expression of individual opinions. If we are all to be State paid we shall not be able to publish our critical feelings, except, perhaps, in the form of scientific papers, and scientific psychology is not yet able to provide a vehicle for every shade of feeling. The actual thing which I wish to say concerns one aspect of the State medicine controversy. State medicine and personal medicine have interests which only overlap; they are not identical, and in regard to extremes they are actually *opposed* to one another. Are this and its significance fully recognized?

Take vaccination. The State obviously needs the maximum control of small-pox. We, as individuals, expect the State to take over this matter, and in an epidemic we blame the State medical service. But even in this obvious case there is also a personal problem, and many a doctor who has advocated compulsory vaccination has found it difficult to have his own baby vaccinated. If he has happened to witness one of the rare complications of vaccination he may easily have felt that a good case might be made out for postponing vaccination in the exceptional case of his own baby. How much more does the uninformed member of the public need to be personally represented against the State. Only if his own doctor, who has helped him fight battles before, advises in favour of vaccination is he led to agree to have it done. The fact that the State advocates it is scarcely an argument at all, since it is obvious that the State cannot take much account of individual needs. If it did it would fail to control small-pox. This meagre example must suffice to illustrate the contrast that exists between the aims of State medicine and personal medicine.

In this matter the public should be actively educated by us before they vote away our power to be their personal doctors, since we are the ones who know most about their own need of both personal and State medicine. And we should also tell the existing State service how it needs the services of a personal doctor, by which, in this context, I mean the clinician whose aim *contrasts* with the aim of the State doctor. The support of the individual members of the public has to be continually won for the actual practical details of State medical practice. And it is the personal doctor who is continually persuading sceptical people (who have learnt to trust his judgment) to undergo inoculations, immunizations, operations, and all sorts of treatments whose value seems entirely obvious to a non-clinical Ministry official. And the reason for the clinician's power to help the State in this way is that his aim is not primarily to serve the State, but is to serve the State secondarily through giving the best possible service to the individual.

One of the best guides to the personal doctor is his willingness to take personal responsibility for cases. No Ministry official ever takes personal responsibility for individual cases, and this makes him an absolutely different being from the clinician. His week-end or his holiday do not mean an increase in the risk that this patient will commit suicide or that one will relapse into a new active phase of rheumatoid arthritis or anorexia nervosa. His work is of a different order and can scarcely be compared with that of the G.P.

In fact, the two have the greatest difficulty in understanding one another, the G.P. looking on the Ministry official's job as a sort of rest cure, and the official looking on general practice as if it were comparable to going to an interesting play or film. In truth the G.P. would be utterly bored by the official's job, and the administrative official would be overwhelmed and even frightened to find himself in general practice. Obviously the two jobs are two jobs. It would always be important, in discussions of the current problems, if each speaker would indicate whether he in his work does or does not take responsibility for individual cases.

All this leads up to my main point, which is, that if all doctors are forced to adopt the State service, then the personal clinical work will immediately be taken over by the unqualified practitioners, to the immense harm of the public. Osteopaths and all kinds of quacks will make a lot of hay in this their new sunshine, and the bad thing is that they will be actually more valuable to the individual members of the public than the doctors. This hay-making will only end when the public demand the inclusion of the quacks in the State medical service. (Clamour for the inclusion of osteopaths has already started.)

Some doctors have naively said that with total State medical services non-medical practice will be more successfully controlled than it is at present, but State medicine is the servant of Parliament, and I have no doubt that an election fought on this subject would return a majority against the exclusion of the unqualified practitioners. Unqualified practice is very widespread, and it will increase as medical practice becomes more scientific, psychological practice being entirely unable to cope with the enormous mass of hypochondria which doctors are becoming too well informed and too honest to treat by other than psychological means.

The upshot of all this is that there is as much need for personal medical practice as there is for State medical practice, and that the two can never become identical, because in certain circumstances their aims are opposed, however much in other circumstances they overlap. Also, the right of the individual to go to an unqualified practitioner should be stoutly upheld by the medical profession, at least until all hypochondria can in practice be treated along scientific lines, and we are at least a century away from such a novel state of affairs. Let us allow our hypochondriacal patients to escape from us to the local osteopath, and there to lose their symptoms which we could not shift (having no access to magic), and at the same time let us die rather than admit any unqualified practitioner into our beloved profession, which eschews magic and at least tries to be scientific. Our new-growing knowledge of the psychology of hypochondria is the only promise we have of a future in which we can offer the public cure of common symptoms without going off the track of scientifically constructed theory. Total State medicine will most endanger us by forcing the issue on this matter of common hypochondria before we are ready for it, and by tempting the public to exercise its new power over us by forcing into our ranks the unscientific symptom-removers, the unqualified practitioners.

I am sorry that this letter is so very long, but it is impossible to state these matters, which are very much more complex than I have represented them to be, intelligibly in a word.—I am, etc.,

London, W.1. D. W. WINNICOTT.

Report of Representative Committee

SIR,—This report should receive our common appreciation and warmest support. I venture to suggest three points of importance in the "General Principles" (*Supplement*, Aug. 7, p. 19) calling for amendment.

1. Surely "the health of the people depends primarily" on their will as well as their opportunity to help themselves. There is far too much talk of what the community must do for the individual as compared with what the individual can and should do for himself. The words "and upon the will of the people to help themselves" should be added.

2. Is "the central administration . . . concerned only with civilian health services" to be a Ministry of Health stripped of its responsibility for local government and housing? If so, local authorities will look to other Departments for guidance, and health will again become the "Cinderella" of local government. Why not call this central administration the "Ministry of Health" and strengthen it as suggested in the report?

3. "Locally, new administrative bodies . . . should be representative, . . . in appropriate numbers, of the local medical profession." Are these bodies to supplant the county and county borough councils and the local sanitary authorities? If so, they must be elected by public vote and will not be representative of the local medical profession. If not, they will not have the power of the local authority, its officers, and its purse; they will be yet another extra body to complicate and delay matters. Local government cannot be split up between health matters and others. The expected reform of local government will, it is hoped, provide bodies, elected by the people and directly responsible to them, who will be more and more influenced by the other "local medical advisory committees," rightly proposed in this report.

The more medical men in local, as in national, government the better. But do not let us tinker with the democratic system, however faulty, of elective governments, local or national, giving the people the doctoring they want, in favour of a corporative exception, redolent of Mussolini.—I am, etc.,

Hatfield. FRANCIS FREMANTLE.

Oestrogens at the Menopause

SIR,—The author of the answer to the question under this title in the *Journal* of Aug. 7 (p. 190) rightly warns against "prolonged and heavy dosage." In discussing the details of dosage, however, he advocates beginning with 0.5 mg. twice or three times daily by mouth of a synthetic oestrogen such as stilboestrol or hexoestrol; increasing cautiously until a dose is found which will give relief; maintaining this dose for 2 or 3 weeks; and then reducing it gradually over 3 to 6 months. Thus the patient would receive more than 1 mg. every day for anything from 4 months to a year. In my experience such dosage is quite unnecessarily high, and, in my opinion, such prolonged and heavy dosage is most undesirable.

I have on numerous occasions obtained satisfactory subjective improvement, using the hot-flush counts as an indicator, and in some cases oestrogenic changes in the character of a "menopausal" vaginal smear, on doses of 0.1 to 0.5 mg. of natural oestrogens by mouth (and stilboestrol is two and a half times as effective by this route as the natural oestrogens). Indeed, a fairly extensive experience of oestrogenic therapy spread over the past 10 years has led me to suspect that symptoms in women of menopausal age which do not respond to less than 1 mg.—other than such late sequelae as atrophic vaginitis—are not due to ovarian deficiency. Women vary considerably during the different phases of their life span in their sensitivity to oestrogens. For instance, during pregnancy and the puerperium they can tolerate quite fantastic doses. Abarbanel and Klein[1] gave as much as 500 mg. of stilboestrol daily for 4 days to mothers suckling infants. On the other hand, the menopausal woman is relatively sensitive to oestrogen.

Overdosage may be accompanied by such undesirable immediate effects as profuse uterine haemorrhage, swelling and tenderness of the breasts, headaches, moliminal feelings of fullness, and peripheral vasodilatation. Furthermore, if synthetic oestrogens like stilboestrol are employed such toxic by-effects as anorexia, indigestion, nausea, and vomiting are not only more likely to be manifest if high doses (i.e., 1 mg. or more) are given but are much more prone to develop at the menopausal age than in younger women, or during pregnancy and the puerperium, when such symptoms never follow even very high doses. But these are only minor inconveniences which label the treatment at best inartistic. There are three other aspects of high dosage, however, which are more important.

It has been shown (Bishop and McKeown[2]) that high dosage of oestrogen renders the organism immediately less sensitive to subsequent dosage, so that it will no longer respond to what was previously a minimal effective dose. Thus the process of "weaning" will be considerably prolonged. Secondly, it has been shown that continued high dosage may give rise to pathological changes in the endometrium characterized by cystic glandular hyperplasia with troublesome and persistent uterine haemorrhage. Nor is the prolonged inhibition of pituitary activity which results from continued high dosage of oestrogen to be lightly discounted. Finally, the carcinogenic tendencies of oestrogens have been fully considered in the light of animal experiments, and though it seems clear that provided oestrogenic therapy is applied in interrupted courses it is quite harmless, the daily administration of doses of over 1 mg. for prolonged periods in cancer-susceptible strains (e.g., in women with a history of carcinoma of the breast) may not be without

[1] *New York St. J. Med.*, 1941, 382.
[2] *J. Endocrinol.*, 1940, **2**, 339.

risk. I believe, therefore, that the promiscuous use of oestrogens in doses of 1 mg. or more is highly undesirable and may actually be dangerous.

The author of the answer to the question on oestrogens at the menopause states that oestrogenic therapy is indicated in only 20% of menopausal women. My experience, which coincides with that of Hawkins,[3] who reported on 1,000 menopausal women, is that about 75% of menopausal women require oestrogenic therapy, and that provided it is given in low dosage and with intervals of remission of treatment the results are most satisfactory and that undesirable by-effects seldom supervene and are of little account.—I am, etc.,

Endocrine Clinic, Guy's Hospital, S.E.1. P. M. F. BISHOP.

Specific Gravity of Cerebrospinal Fluid

SIR,—In his article (Aug. 7, p. 165) Mr. W. Etherington-Wilson asserts that all previous observers have been wrong and that the average specific gravity is nearer 1.003 than 1.004. He bases this statement upon observations made with beads on 314 specimens of fluid at body temperature.

May I point out that density beads are made to work in a medium at 15° C., at which temperature distilled water is given the arbitrary figure of 1.000. At any other temperature the necessary correction must be made. For example, at body temperature (37° C.) the figure for water or standard of comparison is 0.996, which would bring the true specific gravity up to the accepted average figure of 1.007. If Mr. Etherington-Wilson will continue his investigations, using the direct method of comparing the weights of exactly equal volumes of cerebrospinal fluid and freshly redistilled water under the same conditions of temperature, etc., I think he will find it unnecessary to modify our textbooks on physiology.

The classical work on the subject by Levinson tabulates the figures arrived at by 13 different observers. These agree closely, and it can be taken that in health the specific gravity varies between 1.004 and 1.010. In uraemia and diabetes the figure may exceed 1.010, while in hydrocephalus it may be below 1.004. J. K. Hasler has pointed out that fluid obtained by cisternal puncture is slightly lighter, as it contains less protein.

Finally, I might point out that the figure of "nearer 1.003 than 1.004" could not be accurate, as in this case "light percaine" would be either isobaric or slightly hyperbaric. In this event the technique which Mr. Etherington-Wilson himself uses would be impossible.—I am, etc.,

St. Albans. C. LANGTON HEWER.

The Mastoid and D. and V.

SIR,—The literature of infantile otogenic intestinal troubles has received a contribution from Mr. P. W. Leathart (Aug. 7, p. 168). This literature has at times leaned towards mere paracentesis, at other times towards more major surgery. In one decade the label has been latent mastoiditis, in another cryptic; now it is plain unvarnished mastoiditis. While truth no doubt is absolute, Mr. Leathart essays proof, and herein there is doubt.

Nothing in the evidence forces me to any such conclusion as is distilled rather prematurely in the closing sentence of paragraph two. The argument as it relates to the infantile Eustachian tube may be worthy of attention, but it is distressing to find that the infant is to be condemned to a double mastoidectomy because a posterior triangle gland can be rolled under my fingers.

As a concession to tradition we are told that "it would appear relevant to state that the remarks made above are the result of work done chiefly at the Royal Liverpool Children's Hospital in co-operation with the physicians and surgeons during the last 20 years." I feel, however, that before other surgeons are encouraged to operate on 2,000 infantile mastoids we may be vouchsafed a further concession. It is this: we should have something more than the bald statement that "without surgical aid all [presumably 2,000 cases] would have died." It may be true, but the evidence on a question so very serious is of the scantiest.—I am, etc.,

Newcastle-upon-Tyne. F. MCGUCKIN.

[3] *J. Amer. med. Ass.*, 1938, **111**, 390.

Peripheral Arterial Embolism

SIR,—The article by Major H. Agar (July 24, p. 101) on peripheral arterial embolism leads me to record the following case, underlining as it does Major Agar's statement that "many cases [of embolic occlusion] are missed."

A woman aged 54, who had suffered from auricular fibrillation for many years, was admitted to the Manchester Royal Infirmary at about 7 p.m. on Dec. 29, 1942, with a history that she had been seized with severe pain and paralysis of the right leg five hours before. She was examined by a newly qualified house officer, who had unfortunately not seen such a case before. He diagnosed femoral (venous) thrombosis, and admitted the patient to a medical ward. She was seen at about 12.30 a.m. that night by the resident medical officer, Dr. O. Janus, in the course of a routine round, who at once made the correct diagnosis of common femoral (arterial) embolism, and got in touch with me. I performed an embolectomy within the next hour, but although the profunda femoris artery could be cleared of clot, the superficial femoral was completely full and also in spasm. The tunica adventitia was stripped around the bifurcation of the common femoral and the incision then closed. Within the next few days the patient went into a state of anuria, reminiscent of that occurring in crush syndrome, but this settled down. Meanwhile the lower part of the leg had developed a moist gangrene, the line of demarcation being just below the knee-joint. On Jan. 28 amputation was performed through the junction of the middle and lower thirds of the thigh under spinal anaesthesia, but 24 hours later the patient suddenly collapsed and died. A post-mortem examination was not permitted.

The point which I wish to emphasize is that, although I agree with Major Agar that the diagnosis of peripheral arterial embolism is usually easy, it might be better to say that the diagnosis is usually easy for anyone who has seen a case before. I would suggest that it would be a good guiding rule if students were taught that whenever a sudden paralysis or a sudden vascular upset of a limb occurs the case should be regarded as one of arterial embolism until proved otherwise (e.g., by the presence of pulsation in the peripheral arteries, etc.). As things are at present, I have the feeling that the work of Griffiths and Jefferson performed in this hospital on peripheral embolectomy is being largely wasted, because the frequency of the condition (at least eight cases have been admitted to the Manchester Royal Infirmary in the last 18 months, most of them long after the time for embolectomy) as well as its extreme urgency is insufficiently realized.

Despite the failure of embolectomy after 11½ hours in this case I fully agree with Major Agar that operation within the first 12 hours at least is always worth while if there is any chance of the patient surviving it.—I am, etc.,

Manchester Royal Infirmary. A. N. GUTHKELCH, Resident Surgical Officer.

Rupture of Rectus Abdominis during Pregnancy

SIR,—On reading the interesting article by Mr. Rufus Thomas under this heading (July 31, p. 136) I was reminded of a similar case which occurred in this hospital last year.

The patient was a 4-para aged 34; she was admitted as an emergency on May 16, 1942, with a diagnosis of ruptured uterus. On admission she gave a history of having fallen flat on her abdomen ten days previously while moving some furniture. Ever since there had been pain and tenderness on the left side of the abdomen. She was a chronic bronchitic and very obese. She was not collapsed or shocked: temperature was 98°, pulse 92, and respiration 20.

The uterus was enlarged to the size of full-time pregnancy and the presentation was made out with difficulty to be a vertex. The foetal heart was audible and there was no vaginal bleeding. The uterus appeared very tender and swollen on the left side. The urine was clear and the blood pressure 122/78. A provisional diagnosis of concealed accidental haemorrhage was made and the membranes were punctured artificially. The liquor was clear. There was a latent interval of five days before pains started, and during this time the patient's general condition improved considerably and the swelling became, if anything, less painful. The patient's cough also improved.

She had a normal confinement on May 22 lasting 6 hours 10 minutes; there was a moderate post-partum haemorrhage, which responded to the usual treatment. The child was alive and weighed 6 lb. On examination after the third stage a large rounded mass was palpable extending above and to the left of the umbilicus. This was thought to be an ovarian cyst, and as there was no definite evidence of torsion it was decided to leave well alone. The first

two days of the puerperium were satisfactory, but on the third day there were acute abdominal pain and pyrexia, temperature 101°, pulse 116. A laparotomy was therefore performed, as it was thought that the cyst had twisted. The uterus and adnexa, however, were found to be perfectly normal. The large swelling was in the rectus sheath, and several huge clots and about 3/4 pint of old fluid blood were evacuated from the left rectus sheath. The wound was sutured and a large drainage tube left in the haematoma cavity. The patient made a good recovery and was discharged from hospital on June 20.

The great difficulty in this case was the gross obesity of the patient, which led to a false feeling of encapsulation of the haematoma, making it appear an intra-abdominal mass.—I am, etc.,

Newport, Mon. NORA L. KEEVIL, M.D., M.R.C.O.G.

Sterile Solutions and Vaccines

SIR,—Perhaps this idea may help those practitioners who have been at pains to keep sterile any rubber-capped bottles of vaccines and other solutions for injection. The main difficulty appears to be the preventing of ingress of unsterilized air, and yet removing the negative pressure which must result from repeated withdrawals of measured portions of fluid. I suggest the following procedure:

1. Sterilize, by boiling, a small fine-bore hypodermic needle. Dry by running through spirit ether.

2. With sterile forceps pack the hollow of the head of the needle with sterile dry cotton-wool.

3. Pierce the rubber cap of the bottle at one side with the needle and leave *in situ*. Air can now enter the sterile inside of the bottle, but organisms are filtered off by the tight plug of cotton-wool.

This procedure should be quite effective in keeping the contents of the bottle sterile and yet allowing air to enter. The safeguard is the same as used by Pasteur in his flask experiment and by bacteriologists in the use of culture-tubes. Withdrawals of fluid can be made as usual from the central portion of the cap.—I am, etc.,

Aston, Birmingham. C. COLEY GRAYSON.

Fracture-dislocation of the Spine

SIR,—It was with very great interest that I read the report of the recent meeting of the British Orthopaedic Association and your summary of the papers given by Mr. R. C. Murray and Mr. Roland Barnes (July 24, p. 114). It is to be regretted that the report of these two papers could not have been given in greater detail.

More than five years ago I called attention to interlocking of the articular facets as a frequently occurring complication of fracture-dislocation of the spine and, with the encouragement of my then chief, Mr. C. Gordon Irwin, described three cases treated by open facetectomy (*Brit. J. Surg.*, Jan., 1938). Subsequently experience of some fifty cases of fracture-dislocation of the lumbo-dorsal spine, with and without cord or cauda equina lesions, more than thirty of which number I have personally operated upon, leads me to offer the following comments which, I trust, may be of interest.

1. Mr. Barnes states that locking of the intact articular facets occurs more commonly than is generally realized. I would go much further than that and state that fracture-dislocation with transposition of the articular processes is the commonest form in which the injury occurs; more than 50% of my cases have been of this type, either bilateral or unilateral. Consideration of the component parts of the intervertebral articulations will show that for intervertebral displacement to occur the articular processes must dislocate or must be broken off. Cases showing dislocation on one side and fracture of the processes on the other are not uncommon. Only two cases in my series showed fracture of the processes on both sides and direct forward displacement of the upper vertebra; such a condition, one assumes, would tend to produce a scissoring of the spinal contents, and the prospect of recovery would, in consequence, be *nil*—this was true of one case. The second case showed an incomplete cord lesion on admission; reduction was attempted as soon as possible, open operation being required to remove fragments of the processes which were preventing reduction. During the next three days the nervous symptoms progressed to complete paraplegia below the level of the umbilicus. This state of affairs persisted for three weeks, after which time a gradual recovery began, and when I last saw this patient he had regained bladder control and was being taught to walk.

2. In view of the above successful case and of others which have shown varying degrees of recovery, Mr. Murray's limit of 24 hours for recovery from a complete paraplegia seems rather pessimistic. My impression is that signs of recovery should be present within three days of operation if full recovery is to be expected. Signs of recovery after three days give promise of a greater or less degree of ultimate recovery, depending upon the time lapse between operation and the first appearance of returning function. After three weeks any further recovery can be limited only to roots released from tension at operation. In this connexion I entirely agree with Mr. Murray that reduction should be secured in all cases, since the recovery of a few useful segments can be expected in almost all; this may make the difference between a bedridden patient and one who at least can make some effort to help himself.

3. In my own series of cases dislocations located in the dorsal 12 region have included an almost equal number of paraplegic cases and cases in which nervous signs were either entirely absent or were limited to temporary root palsies. I have recently operated upon three cases of the latter type and all are now back at work. Two similar cases, operated upon during 1938 and 1939, are also back at work, one of them actually undertaking work of a heavier nature than that upon which he was employed before his accident.

4. Unskilled attempts at reduction, or hyperextension of the spine as a first-aid measure, are to be strongly deprecated. When the articular facets are transposed intact hyperextension of the spine produces further strain upon the already attenuated spinal contents and may cause irrecoverable damage. Reduction should be undertaken only by a surgeon in possession of adequate *x*-ray evidence of the spinal displacement. Patients should not be hyperextended as a first-aid measure but should be transported to hospital "as they are." If a "hyperextension stretcher" is used the patient should be carried in the prone position.

5. The actual operative procedure will depend upon the anatomical deformity revealed by *x* rays. Not all cases will require open operation. Subluxations, or unilateral dislocations such as described by Wilfrid Adams, if they occur below the ribs can sometimes be reduced by rotary manipulation; such manipulation should be carried out under local anaesthesia, since general anaesthesia removes the only means of checking the safety of any manipulative manœuvre. It has occurred that a case of fracture-dislocation without nervous signs has been manipulated under general anaesthesia and the patient has awakened to the presence of a paraplegia, the dislocation being still present and requiring open operation for its correction (Rogers, *J. Bone Jt. Surg.*, 1938).

I agree with Mr. Barnes that excision of the whole of the superior articular process is to be avoided wherever possible. It is preferable, however, to resort to removal of the *tips* of the processes rather than to the use of levers. Removal of the tips of the processes does not materially weaken the spine—as my own cases have proved to my satisfaction—and additional internal fixation in these circumstances would appear to be unnecessary. Only one case in my series required laminectomy, and that only because the lamina had been fractured and displaced so that it interfered with reduction. For fixation after reduction, as a routine I now apply a full hyperextension plaster jacket, this being more rapidly prepared than a plaster bed, and cut a trap-door in the plaster over the region of the wound. Non-paralytic cases retain the jacket until ready for walking (about three weeks); it is then changed and the new jacket is retained for four to six months. In paraplegic cases the jacket can be bivalved, if necessary, at any time. The nursing staff assure me that nursing attention is usually easier when the jacket is intact. In paraplegic cases the limbs are raised and slung up on Braun's splints to avoid gravitational oedema and to relieve some of the pressure upon the sacral area.

6. The best treatment for the paralysed bladder is a careful house-surgeon. All methods appear to have their disadvantages. I favour the use of the catheter and daily wash-out during the first week or two, in anticipation of the return of bladder control or of the establishment of reflex evacuation, after three weeks' tidal drainage and, later, suprapubic cystostomy for those cases which fail to regain either voluntary control or reflex emptying.

In my original publication I expressed the opinion that open operative reduction appeared to be a rational method of treatment and one likely to produce the maximum benefit at minimal risk. I also expressed the hope, since none of the original three cases was fully cured, that others might feel disposed to employ this method in similar cases. It is very encouraging to note from my own experience and now from that of others that fracture-dislocation of the spine is no longer a condition beyond the effective aid of surgery.—I am, etc.,

Durham. A. H. G. MUNRO.

The Government's Milk Policy

SIR,—It is more than disappointing to find that in the White Paper on measures to improve the quality of the nation's milk supply the Government has only dabbled with the problem. While no one disagrees that "the basis of a sound policy . . . is a well-bred, healthy herd," it is a far cry from that to a milk supply safe to give our children. To admit, in effect, that in England and Wales only 6% of the milk is "not unsatisfactory" is more than a confession of weakness. We shall not be in a position to prevent milk-borne infection until all milk is pasteurized efficiently and all milk reaching and leaving the plants is of the highest standard. The production of well-bred healthy herds is an ideal to be aimed at none the less if milk is to be pasteurized, but pasteurization is the only immediate means of securing a safe milk supply.

Once again it must be reiterated to the public, if not to the profession, that pasteurization has one practical effect and one only—namely, to render the milk germ-free. T.T. milk will not be free from abortus infection, streptococci, diphtheria, typhoid, dysentery bacilli, etc., and veterinary examination of the herds will not detect the milker with a throat infection contaminating the milk. If farmers have to be exhorted in the daily press to take such an elementary precaution against infection as to wash their hands before milking each cow, it is unlikely that they will be easily trained in the art of producing a germ-free milk. An American Army medical officer in this country was so disgusted with what he called our "street-can methods" of handling milk that he has issued an order forbidding any of his troops to drink British milk!

When doctors, especially those dealing with children, see every day some evidence of milk-borne disease, it is natural that they should demand from the Government not "measures to improve the quality of the milk" but measures to render milk safe to drink, and be critical of its half-hearted method of appeasement to the farmers—a policy in which one hoped it had learnt its lesson.—I am, etc.,

Cardiff. A. G. WATKINS.

X Rays and the Colon

SIR,—Referring to the statement in the *Journal* (July 10, p. 51) that Sir Arthur Hurst "warned strongly against *x*-ray examination as a method of diagnosis" for diseases of the colon, and the subsequent valuable comments by Dr. E. Millington (July 24, p. 117), may I, as radiologist in charge of the *x*-ray department of St. Mark's Hospital for Bowel Disease, E.C.1 (a hospital known throughout the world for its contributions to this specialty), submit a few observations in the hope of retrieving Sir Arthur Hurst's lost faith in the opaque enema. As I have not carried out any radiological examinations for Sir Arthur I cannot be implicated personally.

At once let me say I have some sympathy with Sir Arthur Hurst, and I have no hesitation in observing that in this country there is probably more inferior work turned out in examinations by the opaque enema than in any other branch of radiology. We do not require to search far for the reasons, and two prominent causes for this failure to my mind are outstanding. These are lack of thorough preparation of the patient and incomplete thoroughness of the radiological technique. Mild aperients should be employed for premedication and on no account strong irritant drugs such as castor oil. The latter when used perhaps cause more cases of gas collection and spasm than is generally appreciated. The preliminary "wash-out" of the bowel should be done with plain warm water and preferably by the Studa chair method. On no account should irritant substances such as soap be included in the "wash-out." Since the soap-and-water enema was discontinued at St. Mark's Hospital some years ago cases of spasm of the bowel are rare. As to technique, space does not permit detailing some of the important features, but I would stress the importance of the oblique views and particularly the left oblique. Time and time again when nothing is found in the straight postero-anterior views an early carcinoma is demonstrated in one of the oblique views. Inflation of the bowel with gas after the enema in the majority of cases is of limited value. In early carcinoma it is, in fact, misleading, but in cases of multiple diverticulosis it does further balloon out the sacs of the diverticula and help to clinch the diagnosis.

During the past fourteen years, while in charge of the *x*-ray department at St. Mark's Hospital, operative findings on all cases that have been examined by an opaque enema are returned to the department. The records show that out of 2,200 opaque enema examinations only four cases of missed *x*-ray diagnosis are recorded. Of the four two were suspected and the enema repeated but the growth not demonstrated. The growth in the third was obscured by a greatly distended bowel; and in the case of the fourth, a double carcinoma on the posterior wall of the sigmoid flexure, the bowel assumed that elastic expansile feature, and kept the growths hidden behind the redundant loops of the pelvic colon even after the administration of the third opaque enema. All these cases were operated upon and the growths removed.

On the other side of the balance-sheet could be enumerated various cases of how an opaque enema established a diagnosis quite unsuspected clinically; confirmed a clinical suspicion, or corrected a clinical diagnosis from one of carcinoma to one of diverticulosis, or vice versa. In one case a slowly growing carcinoma was watched from its very earliest stages over a period of three years by a series of opaque enemata at a few monthly intervals. The growth was eventually removed, and seven years later the patient, a doctor running a large practice, is in perfect health. Apart from saving the patient's life the series of examinations was most instructive as to the radiological changes of a very early growth.

It might therefore be correct to say that the opaque enema is of the greatest value as a diagnostic agent if a positive finding is recorded. On the other hand, if the result is negative, on no account should it be accepted that early pathology has been finally disposed of, but the physician or surgeon must make his final decision as to diagnosis on his other clinical findings.

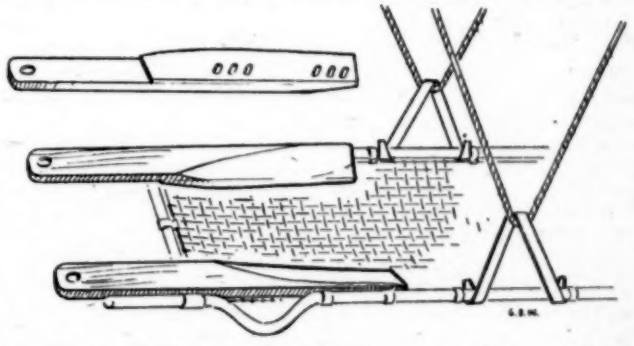
This subject is too vast to cover in the space at my disposal, but I have in the process of writing a book on this work in which I hope to introduce some new appliances and modern points in technique, which may help to reassure the few who may have become depressed about the shortcomings of the older technique.—I am, etc.,

London, W.1. NORMAN P. HENDERSON.

Resuscitation by Rocking

SIR,—The method of attaching the stretcher to the trestle or whatnot is the crux of the business from the practical point of view. (It is, e.g., easy enough to see what the Kilmarnock gadget looks like when finished, but how it is made I cannot make out at all! Another stretcher was illustrated a few weeks ago, and all but the attachment was plainly shown!)

A standard A.R.P. stretcher hung in a hook at the end of a rope, which in turn hangs from a hook in the ceiling, slides backwards and forwards in the hook, to the damage of the wire, etc. Also the whole affair tends to swing about. We have therefore hung a festoon of rope from the ceiling, from two hooks, which stops the swinging, and have got our blacksmith to form the hooks as shown in the accompanying sketch. I don't think anything could be simpler or more quickly brought



into action. Each limb of the hook comes against one of the clips which attach the meshwork to the side member of the stretcher. This stops the sliding. (Iron or mild steel 3/16 × 1 in.)

We have tried the "swing-boat" suspension also, and can confirm that it is absolutely useless if merely rocked to and fro. There is neither impulse to viscera nor effect of gravity.

Its efficiency may, however, be very great, but this can only be achieved by the forcefulness of the push-off from the middle position and the forcible arrest in its return transit; and the effect of gravity can only be obtained by holding the whole affair up for an appreciable time at the ends. Obviously, for a full-grown patient this means really hard work. The effects will be in proportion to the force used, and no more.

Now as to the attachment of the patient to the stretcher—Siebe-Gorman, in a catalogue I have, picture him on their rocking-stretcher held by a sort of yoke over the shoulders and two bands through between the legs high up. I do not know whether they have an alternative, but this must surely tend to crush the body together, whereas fastening by feet at one end and hands extended to the full beyond the head at the other (as recommended by Dr. Eve) will tend to open out the trunk. An ordinary A.R.P. stretcher is much too short to secure a full-sized person in this way, so here is a sketch of our expedient. The timbers are fitted with pegs, which project down through the meshwork, and so long as they are kept down they remain perfectly firm. If neither patient nor his wrappings suffice for this, a turn of twine tied through will suffice.—I am, etc.,

Doncaster. W. REGINALD WILSON.

Medical Boarding for the Merchant Navy

SIR,—On taking up duty recently as ship surgeon in a large liner engaged in carrying troops I was greatly puzzled and surprised at the number of men wanting to "sign off" the ship's articles immediately before we were due to sail. Most trivial ailments were professed as the urgent necessity for being put ashore.

All seamen to be "signed on" as a ship's crew are passed through the Merchant Navy Reserve Pool. On being "signed off" on completion of the voyage they are again received into the pool and draw, I believe, a reasonably generous rate of pay until re-employed. Many men appear to remain in the pool drawing regular pay for long periods without work. Certain members of my crew attempted to get ashore with some trivial excuse after having signed the ship's articles, being conveyed some hundreds of miles by train, and being fed and accommodated and paid for a fortnight or so in harbour. On being "signed off" they again report to the pool, and then, I suppose, say they have recovered from their temporary disability for which they were "put ashore by the doctor," and again become eligible for the benefit of pool pay. Another ship may be available in the near future or there may be a long waiting period—on pay. The same scheme of "paying off" may work again.

These men may or may not be examined by the "Federation" doctor before being granted pool pay. I do not know. I believe only a very small percentage of the men are actually examined before being sent to join a ship, and those who are examined appear to undergo a most cursory examination by a single doctor. In order to put an end to this racket it is surely essential to have a proper and thorough standard examination of all seamen such as we have under the National Service scheme for all Service personnel and the Home Guard. Is not the Merchant Navy an integral part of the fighting Forces? Grade cards should be issued. Certain men should be definitely debarred from going to sea in justice to themselves, and others, because of some such infection as tuberculosis or certain skin diseases, on account of the risk and unpleasantness for their shipmates. Some men physicially unfit for strenuous work as A.B.s might well be suitable for employment as stewards or in some other capacity. To expect efficiency from the "scratch" crews of physically miserable specimens such as are being recruited to the Merchant Service to-day is absurd.

I believe that the standard of Merchant Navy crews to-day, physically and otherwise, is very much below that of peacetime. Many of the best men are serving with the Royal Navy, but the fact of a magistrate recently remitting sentence on a convicted man on condition that he joined the Merchant Navy does not reflect very handsomely on the Service. This caused considerable resentment. I suggest that it is a most urgent matter to have all men who are in the reserve pool awaiting employment at sea properly examined by a medical board and not merely "passed," as may be occasionally required by a single "Federation" doctor. Medical boards are in being all over the country, and it would be a very simple business to arrange for the examination of these seamen—and it should be a Government responsibility.

On my recent voyage one most impertinent youth produced a letter from a doctor recommending *x*-ray examination of the chest every 3 months. Six months had elapsed and this was produced on the day of sailing with a demand to be "signed off." He made other excuses and was a very definite malingerer or "wangler." Another man with chronic bronchitis and emphysema spent part of the voyage in the ship's hospital. Such a man would never be passed by a National Service Board. Many men with disgracefully carious teeth wished to go ashore to have their teeth attended to. This treatment was very necessary, but there is no means of seeing that the treatment is carried out. There should be some regulation enforcing necessary treatment before a man is accepted into the pool. Some men complained of abdominal pain and demanded to be put ashore for *x*-ray examination. Most of these, I am quite convinced, were malingerers. A number suddenly requested to "sign off" on account of deformities and disabilities, such as varicocele, varicose veins, and congenital deformities of the feet, which had not really troubled them for years. A proper system of medical examination and a properly kept medical record card would control the endeavours of these men to shirk their duties.

Briefly, all men in the Merchant Navy Reserve Pool should be passed by a properly constituted medical board and carry compulsorily a medical record card, which should be kept up to date by the ship surgeon or by the Federation doctor each time the man passes through the pool. Any necessary treatment—such as dental extractions, fillings, or other operations—should be undertaken before a man is entitled to benefit from pool pay, or be instituted without delay on leaving a ship. Special arrangements might be made with certain hospitals or new treatment centres opened to avoid a seaman having to loaf about awaiting treatment at an overcrowded hospital with a long waiting list. With more physical fitness and discipline the status and morale of "His Majesty's Merchant Navy" would be more worthy of the name.—I am, etc.,

Huddersfield. S. H. WADDY.

Nurses' Pay and Hours

SIR,—Two recent committees have managed to raise the economic status of the nurse from that of a lavatory attendant to nearly that of an L.P.T.B. railway porter. It would be an exaggeration to say that the labours of these committees have resulted in a "nurses' charter"; but they have at least proved one thing. This is, that nurses have little to hope from their seniors, their "employers," or the medical profession, who are much too worried about the future of their own sixpences and guineas to devote much time to the rights of their sister profession.

The truth is that nursing is the only indispensable profession in the modern world. The medical profession, in its present state, takes a far lower rank. It is undergoing its "twilight of the gods." In any case the nurse goes through a more exacting training than the medical students', and survives much more troublesome tests before she is qualified. She earns 90% of all medical knighthoods, baronetcies, and even peerages. She cannot reach a competence of £300 a year without displaying qualities of mind and soul that would disqualify Winston Churchill or Franklin Roosevelt. Yet she is treated at the best like an irresponsible schoolgirl and at the worst like a Czech in a German labour camp. She is not considered fit, by the "bumbles" who control her destinies, to take any part in the social life of her time, and, God knows, she could tell us a thing or two. One consequence of this is that by the time she reaches the upper ranks of her profession she has the social outlook of a tame elephant.

Her time to act is in the early thirties, or even earlier than that. And she must act for herself. Dr. McKean and I are sincere well-wishers, but all we can supply is a little invective. A dozen young women of the nursing profession must get together and tell the whole body politic of these islands that they have had enough nonsense. They know how to deal with stupid, conceited, and refractory patients, and that is what we all are.—I am, etc.,

Bearsden, Dunbartonshire. O. H. MAVOR.

The Spackman Case

SIR,—With reference to the recent case in the House of Lords of the G.M.C. *v.* Spackman, we would like to bring forward the following points for consideration.

1. As the rules of conduct of the G.M.C. appear, from the evidence in the above case, to be most arbitrary and despotic—denial of the admission of fresh evidence, denial of the right of appeal—it is surely time for a reconstruction of these rules. Can no machinery be evolved whereby evidence before the G.M.C. must be given on oath?

2. From what source does the G.M.C. derive any income? What body or bodies have control of such moneys? In the above case the decision of the G.M.C. to take the inquiry to the House of Lords after receiving an adverse decision in a lower court savours of almost inquisitorial ferocity, in addition to the fact that such measures must dig deeper into the financial resources of the Council if the final decision be unfavourable.

The fact that the *Times* of Aug. 6 sacrificed a whole column of its drastically reduced publication to the reporting of the decision of the House of Lords shows that public interest is aroused, and the reaction of the public to the conclusions, naturally arrived at by them, of the case must be that the Council have conducted themselves in an unfair and prejudiced manner. It is surely such behaviour in the international sphere that we are fighting to suppress, and it behoves us to press for different methods in our own domestic back-garden before we stand out for justice in the wider fields.—We are, etc.,

R. A. P. CORKERY. P. BOBBETT.
DOROTHY G. HERVEY. J. F. LINEEN.

Doctors for China

SIR,—In the spring of last year you inserted in the *Journal* a letter from me asking for offers from doctors and nurses for service in a Red Cross hospital unit in China. Twenty-one were selected and sent out under Dr. W. S. Flowers and have established a base hospital at Changsha, Hunan. Sick and wounded, both civilian and military, are being treated and excellent work is being done.

An appeal has now been received by the War Organization of the British Red Cross and St. John for reinforcements. It is especially desirable that applicants should have a knowledge of the Chinese language or a background of Chinese experience. Further particulars may be obtained from Dr. H. Gordon Thompson at the headquarters of the War Organization of the British Red Cross and St. John, 14, Grosvenor Crescent, London, S.W.1.—I am, etc.,

London, S.W.1. HORDER.

Advice on how local authorities can make fuller use of their powers under the Prevention and Treatment of Blindness (Scotland) Act is contained in a recent circular of the Department of Health. Local authorities should make wider use of special schools and classes for children whose eyesight is defective—arrangements being made with neighbouring authorities where necessary—and of residence in country homes for those whose eye troubles are the result of general debility. There should be closer contact with industrial medical services so that children leaving school are not given jobs that impose heavy demands on defective sight, and more facilities for expert consultation and for treatment of infections responsible for blindness. The circular is the outcome of analyses of the experience of the regional clinics for certification of the blind in Scotland, and particularly of a statistical analysis by Marshall and Seiler, based on the results of examining 3,219 certified blind persons in Glasgow and South-West Scotland. Cataract, myopia, optic nerve atrophy, ulcer of the cornea, glaucoma, and iridocyclitis were found to be responsible for about three-quarters of the cases of blindness. The circular points out that several of these conditions are amenable to treatment, while existing services of local authorities can play a part in preventing others. Early energetic treatment by modern methods, it continues, can prevent the onset of blindness in practically all cases. Even in degenerative diseases leading to blindness in later life many of the conditions can be alleviated by expert care; Drs. Marshall and Seiler concluded that there was still the possibility of restoring vision by operation in more than half of their cases of blindness due to senile cataract. They found, too, that patients with conditions associated with pain or sudden onset were more likely to seek advice than those with disease of insidious onset arising later in life, and that the proximity of hospital facilities affected the numbers seeking treatment.

Obituary

Dr. LOUIS INGRAM DUNCAN, who died at Higher Brixham, South Devon, on July 12, was born in Aberdeen on August 24, 1898, son of the late George Duncan, and was educated at Inverurie Academy and Aberdeen University, where he graduated M.B., Ch.B. in 1921. Dr. Duncan formerly practised in partnership at Port Talbot, Glamorgan, and was teacher of ambulance and hygiene under the Glamorgan County Education Authority. After moving to South Devon he became one of the medical officers to the Brixham Hospital.

We regret to announce the death on July 17 after a long illness of Dr. CECIL WESTLAND PILCHER, consulting surgeon to the Boston Hospital and one of the oldest and most respected members of the local Division of the B.M.A. His father was a well-known general practitioner and surgeon at Boston. From Bath College he went to Keble College, Oxford, with a classical scholarship; he took his B.A. in 1893 and came to London to study medicine at St. Thomas's Hospital, qualifying M.R.C.S., L.R.C.P. in 1899. Dr. Pilcher was an honorary captain in the old Lincolnshire R.A.M.C.V., and during the last war served as civil medical officer in charge of troops, being awarded the M.B.E. for his services in 1914-19. For over 30 years he was divisional surgeon for the local Branch of the St. John Ambulance Brigade. He was an accomplished amateur artist, and several of his works were accepted by the Royal Academy and the Royal Society of Painters in Water-colours. He joined the B.M.A. in 1903, and in 1926-7 held office as chairman of the Holland Division, which he had represented at the Annual Meeting at Oxford in 1904. He was a faithful attender at medical meetings, which he used to enliven by good-humoured caricature sketches of his neighbours. His son, Mr. R. E. M. Pilcher, F.R.C.S.Ed., is honorary surgeon to the Boston Hospital and Spalding Hospital.

Dr. JAMES M. FERGUSON, one of the staunchest supporters of the B.M.A., died on July 24 in the Victoria Hospital, Burnley, at the age of 86. Born in Bolton of Scottish parents, he began life in a humble job in the printing office of the *Warrington Guardian*. After three years as a compositor and occasional reporter he entered as a medical student at Owens College, Manchester, and qualified L.R.C.P.Ed. in 1882, afterwards taking the L.R.C.S.Ed. and the D.P.H. of Durham. As was possible in those days, he gained experience of practice in Burnley and elsewhere as an unqualified assistant. In 1885 he set up on his own account in Burnley, where he became medical inspector under the Factories and Workshops Act, and later medical officer for the local joint hospital board, and medical superintendent both of the district sanatorium and of the small-pox hospital. Dr. Ferguson served the borough as councillor and alderman and was appointed to the magistrate's bench in 1903, so that at the time of his death he was the senior J.P. for the borough. He was highly respected in the town and his kindly and jovial disposition made him popular everywhere. He joined the B.M.A. in 1886, represented the Burnley Division at four Annual Representative Meetings, and held office as its honorary secretary and later its chairman. He was president of the Lancashire and Cheshire Branch in 1911. Though it is some years since Dr. Ferguson took a very active part in the meetings of the Burnley Division, he yet kept in touch with local medical matters, and particularly with B.M.A. doings. Throughout his life he was a keen sportsman, and in the 'nineties played cricket regularly; in later years he devoted much of his leisure time to fishing.

Dr. W. WILTON JOHNS, who died in a nursing home in Edinburgh on July 26, had practised in the Morningside district for the last eighteen years. After qualifying L.R.C.P., L.R.C.S. from Edinburgh University in 1906 and taking the M.B., Ch.B. of that university the following year, he held a house appointment at the Dumfries and Galloway Royal Infirmary. He took his M.D. in 1910. For some years he was in practice at Nairn, where he was also honorary medical officer to the Nairn Town and County Hospital. In 1925 he went to Edinburgh to assist the late Dr. James Graham, and was practising in the Morningside district at the time of his death. Wilton Johns made friends easily, and his sympathetic manner with children accounted for much of his success as a surgeon for 10 years to Donaldson's Hospital. He served as captain, R.A.M.C., in the last war; and was also civil surgeon to the Edinburgh and Border Hospital, Dunkirk, from 1914-15. He is survived by an only son, who is in his fourth year of medicine at Edinburgh University.

Dr. JOHN GILMOUR, who died at Glasgow on July 27, joined his father in practice at Duntocher in 1893, having graduated M.B., C.M. with high commendation at Glasgow University in 1891. He moved to Dalmuir in 1901, and established a large practice in the Duntocher, Clydebank, and Dalmuir areas. In 1908 he took the F.R.C.S.Ed., and in 1911 the D.P.H. of Cambridge with distinction. He was elected a Fellow of the Royal Faculty of Physicians and Surgeons, Glasgow, in 1930. After many years of successful general practice he was appointed in 1921 to the staff of the then Scottish Board of Health when the Regional Medical Service was started. He was posted to the South-Western Area, with headquarters at Glasgow, and his good work and the high esteem in which he was held did much to establish the new service in the good graces of the profession. He retired from the service in 1936, but on the outbreak of war offered to forgo his leisure in order to enable younger colleagues to take up work directly concerned with the war. He superintended the Clyde Basin experiment designed to provide a consultant service for war workers, and was largely responsible for its success. He was without enemies, and his friendship was highly valued, as was his clinical acumen. Dr. Gilmour, who was awarded the O.B.E. in the New Year Honours List this year, served as a member of the Home Office Commission on the Workmen's Compensation Act and Miners' Nystagmus. He is survived by two daughters and a son, Dr. Alan Gilmour.

One of the longest-lived dispensary doctors in Ireland passed away recently in the person of Dr. JOHN POYNTZ RICE. Educated at Clongowes and Queen's College, Cork, he qualified in Edinburgh in 1883. He was appointed dispensary medical officer for Castleisland in 1889, and this position he held for 50 years, retiring in 1939 to a well-earned rest at his favourite hobbies, gardening and farming. He was an ardent supporter of the Royal Medical Benevolent Fund and had been a member of the B.M.A. for many years.

Dr. D. L. T. MACSHERRY, the only surviving son of Dr. and Mrs. Maurice Macsherry of Edgbaston, Birmingham, was killed by enemy action at sea in April, 1943, aged 26 years. He became a surgeon in the Merchant Navy after qualifying M.R.C.S., L.R.C.P.Lond. in 1942.

The following well-known medical men have died abroad: Dr. LESLIE LAWSON BIGELOW, clinical professor of surgery at the Ohio State University College of Medicine and president of the Ohio Medical Association, aged 62; Dr. ELMER BURKITT FREEMAN, clinical professor of gastro-enterology at the University of Maryland School of Medicine, aged 67; Dr. FRÉDÉRIC GUYOT, one of the founders of the Geneva Society of Oto-rhino-laryngology; Dr. NATHAN LÖWENTHEL, honorary professor of medicine at Lausanne University, aged 87; Prof. HEINRICH ZÖRNIG, formerly professor of pharmacology at the University of Basle and founder of the Basle Pharmaceutical Institute, aged 76; Dr. ANDRÉ TOURNADE, professor of physiology at the University of Algiers from 1920 to 1942, aged 62, whose chief work was connected with the physiology of the suprarenals.

Universities and Colleges

UNIVERSITY OF LONDON

The following candidates have been approved at the examinations indicated:

M.D.—*Branch I (Medicine)*: A. J. W. Beard, J. V. Davies, P. Fränkel, Frances V. Gardner, Joyce A. Keeping, Frances J. Pounds. *Branch II (Pathology)*: V. H. Bowers, S. D. Elek, J. L. Penistan, R. E. Rewell. *Branch IV (Midwifery and Diseases of Women)*: J. C. Adams. *Branch V (Hygiene)*: C. E. E. Herington, D. P. Holmes, B. A. Thomas. *Branch VI (Tropical Medicine)*: W. J.-S. Wilson.

ACADEMIC POSTGRADUATE DIPLOMA IN MEDICAL RADIOLOGY.—H. H. Hermann, D. D. A. Jayamanne, B. Sandler, L. M. Shorvon. *Part I*: M. Sheehan.

UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL

The following scholarships, exhibitions, and prizes have been awarded:

Goldsmid Entrance Scholarships: (1) D. R. Smith, Caius College, Cambridge. (2) Miss P. A. Howard, Newnham College, Cambridge. *Goldsmid Entrance Exhibition*: Miss M. B. Robinson, Lady Margaret Hall, Oxford. *Atchison Scholarship*: Miss Geraldine M. Howard. *Magrath Scholarships*: Medicine: A. N. Smith. Midwifery: Miss Geraldine M. Howard. *Erichsen Prize*: K. Chitty. *Liston Gold Medal*: P. H. Jones. *Fellowes Gold Medal*: J. S. Crowther. *Fellowes Silver Medal*: H. Kaufman, T. H. Powell. *Wilfred Trotter Medal*: T. H. Richards, G. R. Parry. *Suckling Prize in Obstetrics and Gynaecology*: L. M. Gerlis. *F. T. Roberts Prize in Obstetrics and Gynaecology*: H. E. Thomas.

Medical Notes in Parliament

House of Lords on Government's Milk Policy

In the House of Lords on July 27 Lord ADDISON called attention to certain aspects of food policy, with special reference to milk and milk products, and their cleanliness and safety. He welcomed the White Paper, and said it represented a great step forward. It meant that the State was going to see that this vital food not only became more popular but was also wholesome. Speaking as a member of the medical profession, he said that a great deal of nonsense had been talked about damaging milk by pasteurizing it. He was glad that arrangements were foreshadowed for sterilization or pasteurization as and when it was practicable to do so. It could not be done all over the country at once, and he gathered that the Minister would begin with the larger centres of population. It would need courage and persistence, but he knew of nothing so far as the improvement of diet and nutrition were concerned which had given him more encouragement for many years than this enterprise.

Lord HORDER said that many who had, on medical grounds, urged for some time that steps should be taken along these lines felt on the whole satisfied with the policy outlined in the White Paper. Time, however, was of the essence of the contract, and he was not prepared to agree with Lord Addison that the techniques necessary to implement the Government's policy must necessarily take a very long time. The Minister of Agriculture would be responsible for the production and the Minister of Food for the distribution of clean milk, so as to ensure that the supply of clean milk to the citizen was guaranteed.

Anomaly of "Accredited" Milk

There was, however, one exception to this general sense of satisfaction which medical men and women felt about the safeguards outlined by the Government, and that was the sale of milk from an accredited herd. He believed that much of this milk was not obtained from tuberculin-tested cows. If that were so, why was it not going to be an offence to sell this milk unpasteurized? He hoped that the Government would reconsider this important point. With regard to the Ministry of Agriculture taking over the supervision of the conditions of milk production, it was to be hoped that the local authorities would not ca'canny in the matter of vigilance for clean milk but would still hold a watching brief for the consumer. The supply of veterinary inspectors would for some time be very limited. The efficient working of the Government's policy would require frequent sampling of milk, especially milk supplied to hospitals, schools, and canteens. That sampling should still be undertaken by local authorities, and should cover bacteriological tests as well as mere tests as to keeping properties.

He denied the statement sometimes made that the medical profession were not unanimous on this matter. There was as complete unanimity in the profession on this point as there was on any question in a free country like ours, where a few folk would always take a pleasure in showing their freedom by differing from the great majority. Some three months ago an influential deputation urged on the Minister of Food the need for pasteurization of bulk milk. That deputation included representatives of the three Royal Colleges, the B.M.A., the National Association for the Prevention of Tuberculosis, the Joint Tuberculosis Council, the British Paediatric Association, and the People's League of Health. There was no difference of opinion on the importance of feeding babies with milk, but when we asked what sort of milk we should pour into babies we were faced with the anomaly to which he had referred. There was a note of drama about tuberculosis which tended to lessen the significance of other diseases which were spread by germ-laden milk. He had in mind undulant fever, septic disease processes in considerable number, scarlet fever, diphtheria, and typhoid. It was difficult to assess the number of these septic cases which were attributable to milk. We knew a good deal more exactly how many cases of bovine tuberculosis occurred each year, but the morbidity —i.e., the prevalence—and the mortality of these cases taken together must far outweigh those due to tuberculosis.

Long-term and Short-term Policies

There were two ways, Lord Horder said, of making milk really safe for children and young adults. We could take steps to ensure that the cows that provided the milk were free from disease, and that the processes of collection and distribution were clean and not dirty. The other way was to pasteurize the milk and so sterilize it as to make it safe for human consumption. While he favoured both the long-term

and the short-term policies, the former was not enough. It would take several decades before anything like complete cleanliness was effected at the cow end. Among other things, there was the status of the veterinary profession and the paucity of its numbers. We had the best stock in the world, but we had a long way to go in the care with which we looked after that stock. We must do more to encourage intelligent men and women to enter the ranks of veterinary service.

A third alternative by which milk could be made fit for human consumption was by boiling it. This alternative could not be considered for two reasons. First, boiling milk definitely lowered its nutritive value, whereas pasteurization did not. In the second place, if they warned mothers that they must not give milk to their babies unless it was boiled, they would be stigmatizing milk and sabotaging a basic food. They would prevent thousands of mothers from giving it at all, and would lower the popularity of milk in such a way as adversely to affect its production.

In these days, with steel in short supply, pasteurizing plants could not be multiplied indefinitely, but it was not impracticable for their number to be largely increased and for milk to be bulked to a greater extent even than at present. It might not be a bad thing to release a little steel to make the pasteurizing plants. There were people who said that this must wait until after the war. It could not wait, for the position worsened rather than improved. The Minister of Food recently admitted that a lot of T.T. milk found no market as such, and the White Paper gave no assurance that this position would improve in the near future. A large quantity of T.T. milk was mixed with dirty milk. It had been said that this system of making milk safe by pasteurization was likely to drive the small producer-retailer out of business. We should all regret that, but the cover offered to the small producer-retailer by the proposals of the White Paper should disabuse people's minds of the idea of hardship inflicted on him. If the technique needed to pasteurize all bulked milk eventually resulted in the shutting down of some of the dirtier milk-handling and distributing premises, so much the better for the community.

Extent of Pasteurization

Lord WOOLTON said that already in London 96% of milk was pasteurized, in Manchester 85%, and in Glasgow 70%. In the areas of over 10,000 population—the areas with which they were dealing—65% of the milk was already in pasteurized form. Their estimate was that within the next few months they would be able to increase the amount of pasteurized milk from 65% by another 15%, and that in a year from that time —18 months from now—they would be able to cover the whole of the country in which they had introduced rationalization schemes. The problem before the Government was to get sufficient new plant to deal with this increased quantity of milk. Broadly speaking, the rationalization schemes would deal with all the places where there was bulked milk. The mixing of T.T. milk with bulked milk was a common practice before the war. He believed that only 25% of the T.T. milk found its way as such to customers. He had taken the responsibility for seeing that that milk should be marketed. His intention was to try to direct it to these centres so that children should have it; to try to direct it to consumers, so far as transport difficulties would allow, so that they might purchase it as T.T. milk; and so to direct it that it should be sold at a price which people could afford.

He had been asked by Lord Horder about accredited herds, and whether it was not true that, even within the limitations the Ministry had made, there would not be a danger of tubercle. Certainly it was true. This was another example of the best being an enemy of the good. If they had waited until they had reached agreement on perfection before issuing the White Paper, they would have had to wait still longer. The Minister of Agriculture and he took what they regarded as a commonsense and practical step. They had the agreement of the National Farmers' Union, the "small retailers" subcommittee of that union, and they had all this medical and scientific opinion. It seemed to them that it was the wise and statesmanlike course to take this basis of agreement as far as they had got it, and to proceed to act, knowing full well the mechanical hindrances to getting any further amount of milk treated. He hoped, therefore, Lord Horder would not think they had been half-hearted about this. They had adopted a political compromise which took them a long way further on the road and at any rate gave them an opportunity of doing all that they could do with the material at their disposal.

Diseases "Normally Unaffected" by War Service

Mr. DRIBERG on July 29 asked the Minister of Pensions to circulate the list of diseases held by the current consensus of medical opinion to be neither caused nor aggravated by military service. Sir WALTER WOMERSLEY replied that it was impossible to extract from all the diseases known to medical science a complete list of those in the causation or worsening of which war service would be unlikely to play any part. There were, however, certain diseases or groups of diseases the onset or development of which would normally be unaffected by service. It should not be assumed, however, that every case in which the disability was due to one of these diseases was necessarily rejected. Examples of the more common of these were: malignant diseases with certain well-recognized exceptions; certain diseases of the glands—for example, lymphadenoma; certain diseases of the nervous system of developmental origin—for example, syringomyelia; certain diseases of the blood and blood-forming organs, such as leukaemia; progressive visual changes due to errors of refraction; and venereal diseases.

The White Paper on Health Services

On August 3 Capt. PETER MACDONALD asked the Minister of Health when he proposed to issue his White Paper containing his preliminary proposals for implementing the health scheme of the Beveridge report. Miss HORSBRUGH said that the Minister hoped it would be possible to publish a White Paper about the time when the House reassembled. This would then serve as a focus for full discussion by all concerned, including many interests besides the medical profession, and it had always been the Minister's clear intention to give ample opportunity for this.

Food Value of Oatmeal

On August 3 Mr. MATHERS asked the Secretary of State for Scotland whether he could give any information about the effect on the nutritional and health standards of persons who made oats and other characteristic Scottish products a prominent feature of their diet. Mr. JOHNSTON said that oatmeal was a highly nutritious grain, rich in some of the essential elements of an adequate diet—namely, vitamin B_1, carbohydrates, protein, and fat. Like any other item of diet, oatmeal was not generally consumed by itself as a complete food, but as a cereal it was shown by chemical analysis to be four times as rich in fat content as white wheat flour, while oatcakes were 10 times as rich in fat content as white bread.

Replying further to Mr. Mathers, Mr. Johnston said his statement was founded on an analysis by Dr. McCance, published by the Medical Research Council.

Accommodation and Nursing for Tuberculosis in Scotland

On August 3 Mr. JOHNSTON informed Mr. McNeil that on July 1 last 1,007 patients suffering from pulmonary tuberculosis had been waiting for hospital accommodation for 10 days or more. Between the beginning of April and the beginning of August 244 new beds had been occupied, and nursing staff had been obtained for 65 additional beds which had not been in use owing to lack of staff. A further 130 beds were ready for occupation as soon as nursing staff could be obtained, and a still further 330 new beds would be available immediately certain adaptations were completed, provided there was nursing and domestic staff. Proposals to cover the remainder of the waiting list by release of further emergency hospital service beds were being urgently examined.

The Medical Student

During the debate on education in the House of Lords on August 4 Lord MORAN said that for 25 years he was dean of a London school of medicine to which every year came 60 or 70 new students, who, for the next five, six, or seven years, applied the education they had already been given to the new task of becoming doctors. The results on the whole were disconcerting. Many of these boys lacked reasoning power. Many were without curiosity. A student without curiosity was not a student at all. He would not debate how far these defects were due to early specialization, and how far to the examination system. In the education of the medical student they kept adding to the curriculum; they never took away. They asked him to memorize a mass of facts instead of teaching him how to handle them. Before they sent him away they contrived so to educate him that he could not educate himself. He had no power of growth. Lord Moran said that he himself had come to inquire not how much a man knew when he qualified, but whether he wanted to learn and if he knew how to learn. The explanation of this curious ineffectiveness was that the teaching art was of extreme difficulty. Nothing would come of Parliament's efforts in education unless it could explain to the country that it must have the best for the teaching profession, and unless they had a method of finding out during the war the men needed for the profession. Relationship between teacher and pupil was as important. One could talk to a class, but could only teach boys and girls whom one knew. That was

brought home to him in the early part of the war. Usually physicians and surgeons attached to London hospitals visited them three or four times a week. But when students were scattered among half a dozen hospitals outside London two or three of these teachers went to live and mix with groups of thirty students or so. They messed with them, got to know them, and educated them.

Nurses' Salaries

Mr. MESSER, on August 4, discussed the recommendations of the Rushcliffe Committee on the salaries and emoluments of nurses. He said this was the first attempt at a national standard and was a great step forward, but the Minister of Health had put the recommendations too hurriedly into operation. Those recommendations in the main concerned female nurses, but the committee comprised 12 women nurses and 28 men, with no working nurse among them. In the new scale matrons could get £900 a year in salaries and emoluments. Ward sisters' salaries plus emoluments would be brought up to about £220. Yet the ward sister was the key officer of a hospital. If they had not an efficient ward sister they had not an efficient hospital. Even under the recommendations of the Rushcliffe Committee the ward sister was underpaid. As a consequence there was a tendency for trained nurses who became ward sisters to leave the work and become administrative sisters. Ward sisters were, in point of fact, more important than sister tutors, who got a higher salary. Mr. Messer remarked that although the Rushcliffe Committee appeared to assume that the custom would continue of nurses living within the hospital, the tendency was now for authorities to have a large section of the staff living outside. The committee laid down allowances for nurses who lived out, but these allowances were insufficient and varied for a sister, a State-registered nurse, and an assistant nurse. Mr. Messer also pointed out that matrons of public assistance institutions were not entitled to the benefits of the recommendations.

Mr. BROWN said the nursing organizations were asked to nominate to the Rushcliffe Committee and had done so. It was not due to him that there were not more women on the committee. The committee had spent 15 months going through the categories of nurses, and it was necessary that the Ministry should act swiftly on this side of the committee's work, since the Athlone Committee's report had been necessarily laid aside when war broke out. He did not bind himself to accept what the Rushcliffe Committee might recommend on other subjects. At the moment he did not see any justification for altering the major recommendations.

Women in War

During a debate in the House of Commons on August 3 on the position of women in national service Dr. EDITH SUMMERSKILL said that in the Women's Auxiliary Services women were now replacing men, head for head. Those who had seen the women on the A.A. gun sites had been very impressed by their work. Yet these picked personnel on gun sites were paid only two-thirds of the men's rate. The only women in the Services paid the same rate as men were doctors, although other women were doing work which was just as specialized. There were brilliant scientists in the Services who were being paid only two-thirds the rate. The doctors had a strong organization to protect them. It should not be necessary in this country for women to be strongly organized in the Services before they could get justice. The B.M.A. would not sanction the Government recruiting women doctors at a cheap rate. Therefore women doctors, who were organized, were treated fairly, while unorganized women who had no trade union were not. She also could not understand why women members were not allowed to practise first aid in the Home Guard, and why women doctors were not eligible for service in the Home Guard.

Nurses (Scotland) Bill

The Nurses (Scotland) Bill passed through the report stage in the House of Lords on July 15 after an amendment had been made, on the motion of Lord Alness, to enable persons to be placed on the roll of assistant nurses on producing evidence that they had been engaged in practice before the passing of the Act. The Bill was read a third time on July 20 without debate and was returned to the House of Commons.

On July 27 the House of Commons agreed to the Lords' amendments. Mr. THOMAS JOHNSTON said that existing facilities for the training of nurses were, by common consent, insufficient. They were 700 trained nurses and 600 assistant nurses short of requirements. The principal amendment inserted by the House of Lords and which the Government accepted made some little contribution to training facilities. There were seven base hospitals under the emergency scheme owned and staffed by the Government, and it was agreed that, so far as possible, they should be put in a position to afford training facilities in addition to those already provided by voluntary and local authority hospitals. In some quarters it had been apprehended that these State hospitals would not be subject to General Nursing Council Regulations. The regulations and provisions for the training of nurses would, however, be gladly accepted in the State hospitals as well. There was no fear that the Government were trying to add to the number of training facilities outside the control of the General Nursing Council. On the contrary, he hoped to have the assistance of the Council and of voluntary and local authority hospitals in one general comprehensive co-operative scheme for the training of a large number of nurses. He had already had meetings with the voluntary hospital authorities and the State hospital directors on this matter.

The Bill received the Royal Assent on August 5.

Working Hours of Nurses.—Sir HENRY MORRIS-JONES inquired on July 20 whether the recommendations of the Rushcliffe report of a 96-hour fortnight for the general body of nurses had been adopted by voluntary and municipal hospitals in this country as a statutory obligation, and whether these hours included time off for meals. Mr. BROWN replied that the Nurses Salaries Committee recommended that a 96-hour fortnight should be brought into national operation as soon as circumstances permitted, at a date to be determined by him, having regard to the availability of staff and subject to the requirements of the service. He could not say that the supply of nurses at the present time sufficed to enable a 96-hour fortnight to be worked at all hospitals. The committee made no reference to time spent at meals, but the interdepartmental committee, under the chairmanship of Lord Athlone, to whose recommendations the Rushcliffe Committee drew attention, said that the 96-hour fortnight was meant to be exclusive of time spent at meals.

Raw Milk Supplies.—Major YORK inquired on July 21 whether in areas scheduled under the new milk scheme it would be permissible for parents who prefer raw milk for their children or themselves to obtain delivery. Mr. MABANE replied that it would be permitted provided their existing retailer was able to supply T.T. or accredited milk, but not otherwise in scheduled areas.

White Paper on Population.—In the House of Lords on July 27 Earl DE LA WARR asked the Government when they would issue the White Paper on population, which was promised in the debate on June 8. Lord SNELL said that the preparation of this White Paper was obviously an elaborate task, and the Minister of Health regretted that he could not at present give any indication when it was likely to be completed

Supply of Nurses.—Mr. MALCOLM MCCORQUODALE, in reply on August 5 to Sir Ralph Glyn, said that just over 400,000 persons had registered under the Nurses and Midwives (Registration for Employment) Order, 1943. Of these approximately 270,000 were engaged at the time of registration in some form of nursing or midwifery work. About 130,000 were not engaged in such work. It was expected that most of these, on account of age, family responsibilities, or for some other reason, would prove not to be available to return to the nursing or midwifery services. Any approach to the problem of satisfying the demands for nurses and midwives must include the recruitment of additional persons at present untrained in such work, the redistribution where necessary of persons already performing these services, and the return to the services of experienced persons not at present practising. Interviewing both of persons registered recently and of those who came forward in response to the recent publicity appeal began at the appointments offices of the Department in June. During June and July nearly 2,000 nursing and midwifery vacancies had been filled.

Mass Radiography Units.—Mass radiography sets already ordered are being delivered as quickly as is compatible with other demands on material and the highly skilled labour required, but it is not expected that delivery will be completed much before the middle of next year. In the meantime Mr. Ernest Brown will consider the question of ordering further sets. He has suggested to tuberculosis authorities that arrangements should be made between them for sharing the use of the units now in course of allocation. The apparatus is readily transportable.

Notes in Brief

The latest revision of the list of medical reference books issued to all medical units at home and abroad was started in May of this year and was completed early in July. The Director-General, Army Medical Services, is advised in these matters by the Army Medical Department Consultants' Committee.

The first miniature radiography unit has not yet been delivered in Scotland. Delivery to Glasgow Corporation has been promised almost immediately.

Under the milk-in-schools scheme milk may be supplied only by persons who have been approved by the medical officer of health on the ground of the source and quality of their supply. It rests with the medical officer of health to determine what periodical tests or other evidence he should require for this approval.

The principal British representatives in Allied Military Government in Occupied Territory include Colonel Gordon Cheyne, O.B.E., *M.C.*, Chief Health Officer.

No. 30

INFECTIOUS DISEASES AND VITAL STATISTICS

We print below a summary of Infectious Diseases and Vital Statistics in the British Isles during the week ended July 31.

Figures of Principal Notifiable Diseases for the week and those for the corresponding week last year, for: (a) England and Wales (London included). (b) London (administrative county). (c) Scotland. (d) Eire. (e) Northern Ireland.

Figures of Births and Deaths, and of Deaths recorded under each infectious disease, are for: (a) The 126 great towns in England and Wales (including London). (b) London (administrative county). (c) The 16 principal towns in Scotland. (d) The 13 principal towns in Eire. (e) The 10 principal towns in Northern Ireland.

A dash — denotes no cases; a blank space denotes disease not notifiable or no return available.

Disease	1943					1942 (Corresponding Week)				
	(a)	(b)	(c)	(d)	(e)	(a)	(b)	(c)	(d)	(e)
Cerebrospinal fever	47	4	13	1	3	69	5	28	2	2
Deaths	—	1	1			—	—	1		
Diphtheria	609	40	127	66	40	650	33	161	65	13
Deaths	6	1	—	—	—	12	—	2	1	—
Dysentery	99	13	160	—	—	64	9	52	2	—
Deaths			—	—	—			—	—	—
Encephalitis lethargica, acute	1	—	1	1	—	1	1	1		—
Deaths		—	—				—	—		
Erysipelas			29	4	3			48	8	4
Deaths		—	—				—	—		
Infective enteritis or diarrhoea under 2 years				36					119	
Deaths	61	11	12	14	7	42	11	10	9	4
Measles	2,262	143	35	20	3	6,476	740	144	53	76
Deaths	2	—	—	—	—	3	1	1	—	1
Ophthalmia neonatorum	78	7	22	—	—	81	4	34	1	1
Deaths										
Paratyphoid fever	10	2	1	—	1	6	2	6	—	—
Deaths	—	—	—	—	—	—	—	—	—	—
Pneumonia, influenzal*	432	24	12	—	3	418	24	4	—	4
Deaths (from influenza)	9	1	1	—	—	6	14	1	—	—
Pneumonia, primary			135	19				112	17	
Deaths		23		5	7				5	5
Polio-encephalitis, acute	1	1				4	—			
Deaths		—					—			
Poliomyelitis, acute	11	1	—	4	—	9	—	2	2	—
Deaths		1					—			
Puerperal fever		3	16	—	—		—	17	2	—
Deaths		—					—			
Puerperal pyrexia†	163	10	13	—	—	160	12	19	—	1
Deaths										
Relapsing fever	—	—			—	—	—			—
Deaths										
Scarlet fever	1,979	193	170	44	39	1,456	73	253	41	19
Deaths	1	—	1	—	—	—	—	1	—	—
Small-pox	—	—	—		—	—	—	7		—
Deaths	—	—	—	—	—	—	—	—	—	—
Typhoid fever	13	1	3	9	6	9	—	2	16	—
Deaths	—	—	—	—	—	—	—	1	—	—
Typhus fever	—	—	—	—	—	—	—	—	—	—
Deaths			—	—	—			—	—	—
Whooping-cough	1,896	95	56	36	38	1,116	104	10	50	12
Deaths	10	—	4	—	1	4	2	2	3	1
Deaths (0–1 year)	350	34	68	25	29	264	37	59	29	25
Infant mortality rate (per 1,000 live births)										
Deaths (excluding still-births)	4,100	591	544	143	101	3,764	505	514	157	117
Annual death rate (per 1,000 persons living)			12·3	9·4	‡			11·6	10·5	‡
Live births	6,559	759	940	322	264	6,430	705	849	471	294
Annual rate per 1,000 persons living			19·2	21·2	‡			17·6	31·4	‡
Stillbirths	255	26	35			234	34	26		
Rate per 1,000 total births (including stillborn)			36					30		

* Includes primary form for England and Wales, London (administrative county), and Northern Ireland.

† Includes puerperal fever for England and Wales and Eire.

‡ Owing to evacuation schemes and other movements of population, birth and death rates for Northern Ireland are no longer available.

EPIDEMIOLOGICAL NOTES

Discussion of Table

In *England and Wales* notifications of measles were down by 224, and of whooping-cough by 185. There were also 120 fewer cases of scarlet fever (41 fewer in Middlesex): a feature of this disease during recent weeks has been the large fluctuations in alternate weeks with only very small differences in the intervening weeks. Diphtheria, notifications of which have been at a fairly constant level during the past two months, rose in incidence by 18 cases.

Within the counties there were large variations in the trend of whooping-cough. There were 60, 59, 39, and 31 fewer notifications respectively in Lancashire, Durham, Glamorganshire, and Devonshire; in Warwickshire there were 45 more cases and in Shropshire 37. Measles was down in Kent by 60 cases, in Surrey by 48, in Northamptonshire by 37, in Wiltshire by 37, and in Lincolnshire by 36; the only increase of any size was of 35 more cases in Norfolk.

Dysentery notifications were 6 fewer than in the preceding week. Small outbreaks occurred in Wiltshire 6 (Amesbury R.D. 4, Calne and Chippenham R.D. 2) and Shropshire, Oswestry R.D. 9. The infection persists in Bristol C.B., where there were 10 further cases during the week: 13 cases were reported in both London and Lancashire.

In *Scotland* a large rise—21 cases—in the incidence of dysentery was recorded for the third consecutive week, this being due to the increase in the County of Kincardine, where the cases went up from 15 to 60. In West Lothian County notifications dropped from 50 to 35. The incidence of dysentery remains high in the cities of Aberdeen 18 and Edinburgh 13. Only 13 cases of cerebrospinal fever were notified—about half the weekly average for the preceding two months.

In *Northern Ireland* the principal centre of diphtheria was in the County of Londonderry, where 15 of the total of 40 cases were recorded.

Infections due to Food

The monthly bulletin for August of the Emergency Public Health Laboratory Service describes the results of the investigations into outbreaks of food-poisoning. An outbreak of paratyphoid in Sussex was traced to infected milk. The agent was a school employee who was mainly responsible for the distribution of the milk to the children. A small outbreak of food-poisoning in Berkshire was attributed to brawn. The unhygienic method of preparing the food resulted in the introduction of *Staph. aureus* from pustular lesions on the hands and wrists of the employee engaged in the final stages of mixing the brawn. An outbreak of food-poisoning at Barnstaple was also traced to infected brawn. The brawn was contaminated by a chronic nasal carrier of *Staph. aureus*, and the organisms proliferated rapidly, as the brawn was kept at room temperature overnight during the warm weather prevailing at the time. These investigations emphasize the importance of personal hygiene among the staffs preparing food and also the need for keeping prepared foods in a cool place.

The Week Ending August 7

The returns of infectious diseases in England and Wales during the week included: scarlet fever 1,520, whooping-cough 1,614, diphtheria 493, measles 1,903, acute pneumonia 484, cerebrospinal fever 34, dysentery 122, paratyphoid 5, typhoid 8.

Medical News

In the account published in the *Journal* of August 14 of the experiences of British surgeons on their visit to the U.S.S.R., we omitted to mention that Col. Elliott C. Cutler, M.C., Chief Consultant in Surgery, American Army Medical Corps, was one of the distinguished American surgeons who formed part of the joint Anglo-American Mission.

The latest step in the campaign for the prevention of blindness in India is a "floating eye hospital" which has been equipped in Bengal to travel the canals and waterways of the country.

The Homes of Recovery for War-blinded Civilians, which were established after the outbreak of war by the National Institute for the Blind to provide special training for air-raid casualties, have proved so helpful to persons losing their sight late in life that they are to be a permanent part of the Institute's work. In future they will be known as the Queen Elizabeth Homes of Recovery. One of them was presented to the Institute by the British War Relief Society of America.

The Ministry of Health announces (Circular 2843) that as from April 1 last the pay of members of the Civil Nursing Reserve is to be as follows: trained nurses in charge of a ward, £140, rising by £10 to £190; other trained nurses, £110, rising by £5 to £140; assistant nurses, £75, rising by £5 to £95; and nursing auxiliaries, £57 10s., rising by £2 10s. to £65. When the nurses are non-resident living-out allowances (in addition to meals on duty and laundry) of £70 for a trained nurse in charge of a ward, £65 to other trained nurses and assistant nurses, and £55 to auxiliaries should be paid. All members of the reserve who are employed in a tuberculosis institution or tuberculosis wards should receive an additional £10 a year and free travel twice a week to the nearest centre of population. The circular, which has been sent to local authorities, voluntary hospitals, and local emergency organizations, also sets out the conditions governing annual and sick leave.

The Minister of Health, addressing the annual conference in London of the National Association for the Prevention of Tuberculosis, said that in 1942, the third year of war, the number of deaths from tuberculosis fell to the record low level of 1938, the last year of peace. The total was less than half the number of deaths in 1918. But the tuberculosis death roll was an index of past rather than present conditions, and the circumstances of war must favour the spread of the disease. It was for this reason that the Government decided to intensify the attack on pulmonary tuberculosis immediately by "opening two new fronts"—mass miniature x-ray photography and special allowances while under treatment for people with dependants. It was estimated that when this scheme of allowances was in full swing the cost to the Exchequer would be about £3,000,000 a year. "In the past," the Minister said, "fear of having to resort to poor relief made many a sufferer go on working until hope of effective treatment faded or disappeared. The new scheme of allowances is not a system of doles or pension, but a weapon put into the hand of the doctor in his fight against tuberculosis, at a stage when he has every chance of beating his enemy."

The Home Service Ambulance Committee of the Order of St. John and British Red Cross Society suggests that, to conserve petrol and tyres, doctors who want patients brought more than forty miles to London should make use of the committee's ambulances which otherwise would return empty to London. Notice by letter two days before the date of the journey should be sent to the Joint Secretaries, Home Service Ambulance Committee, 12, Grosvenor Crescent, S.W.1.

Dr. J. Rawdon Soddy, Colonial Medical Service, is reported missing at sea.

The Services

Cols. (Temp.) A. Bremner, M.C., T.D., D. G. Cheyne, O.B.E., M.C., and E. E. S. Wheatley, D.F.C., R.A.M.C., have been appointed C.B.E. (Military Division) in recognition of gallant and distinguished services in Tunisia.

Lieut.-Col. B. P. Baliga and Major (Temp. Lieut.-Col.) A. Ullah, I.M.S., have been appointed O.B.E. (Military Division) and Capts. (Temp. Majors) J. Hay-Arthur and W. J. F. Young, I.M.S., and Jemadar S. Y. Bhagwat and Asst. Surg. 1st Class L. H. Carr, I.M.D., have been appointed M.B.E. (Military Division) in recognition of gallant and distinguished services in Persia-Iraq.

The following have been mentioned in recognition of gallant and distinguished services in Persia-Iraq: Major-Gen. (Acting) J. G. Gill, D.S.O., O.B.E., M.C., and Brig. (Temp.) C. D. K. Seaver, late R.A.M.C.; Cols. (Temp.) W. M. Cameron, O.B.E., J. J. Magner, M.C., T. H. Sarsfield, and C. Scales, M.C., R.A.M.C.; Lieut.-Col. L. B. Clarke and Majors (Temp. Lieut.-Cols.) W. A. D. Drummond, P. J. Richards, and T. Seager, R.A.M.C.; Capt. (Temp. Major) D. J. Wigginton and Capts. G. A. C. Miller and W. C. Wightman, R.A.M.C.; Col. (Temp.) K. S. Master, M.C., I.M.S.; Majors (Temp. Lieut.-Cols.) B. J. Griffiths and F. C. Jackson, I.M.S.; Majors R. L. Henderson, L. Oswald, and J. R. Vaid, I.M.S.; Capts. (Temp. Majors) R. M. McCullough, F. J. O'Dowd, and J. H. Walters, I.M.S.; Capts. B. Ahmed, S. P. Bhalla, A. Haq, N. A. Kuraishy, S. P. Mukherjee, and S. A. Sheikh, I.M.S.; Subadar-Major B. Ram, I.M.D.; Subadars K. R. Channa, G. C. Pahawal, and S. Ram, and Jemadars J. Subrahmanyam and M. S. Kataria, I.M.D.

CASUALTIES IN THE MEDICAL SERVICES

Wounded.—War Subs. Capt. D. M. Cathie, R.A.M.C.

Prisoners of War.—Major H. J. Anderson, R.A.M.C., Capt. W. R. Grant, R.A.M.C., War Subs. Capt. J. F. Pantridge, R.A.M.C., Major J. A. Reid, R.A.M.C., War Subs. Capt. A. Roy, R.A.M.C.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to THE EDITOR, BRITISH MEDICAL JOURNAL, B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1.

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ANY QUESTIONS?

Intermittent Claudication

Q.—*I should be grateful for any information that you can give me that is likely to benefit the following case. A male patient of 70 years, who has cramp-like pains, more particularly in the left thigh and calf muscles, is prevented from walking more than a few hundred yards. As he is a farmer this is naturally a great handicap. On examination he is rather a thin subject with no undue amount of arteriosclerosis. His B.P. is normal for his age, and his urine is free from albumin or sugar. Rectal examination shows a slight prostatic hypertrophy but no other abnormality. I presume the condition is one of intermittent claudication, but am at a loss to attribute a cause.*

A.—Yes, this is an example of intermittent claudication, and it is due to arteriosclerotic changes in the arteries to the lower limbs. With such aetiology this occasional accompaniment of age has to be regarded as beyond the power of a doctor to alter in any effective way. If so, the indication is to dwell on the favourable signs and absence of complications noted in your patient, and to prevent him from becoming too much preoccupied with his disability. He must accept it and make all possible arrangements to avoid unnecessary walking—a plan which will be easier when more petrol is available after the war. Warm clothing is needed, and scrupulous care and cleanliness of the skin, so as to avoid the least injury to the legs, that have a restricted blood supply and might not heal readily.

Pillows

Q.—*Are pillows necessary or advisable for the nursing of infants and children with respiratory illnesses such as pneumonia and whooping-cough? Do healthy children up to the age of 5 need pillows?*

A.—This question of pillows seems to be a matter of common sense. Some nursing books recommend that patients with lobar pneumonia be nursed sitting up and with bronchopneumonia lying down, but it has always seemed to me at any age the best position is the one in which it is found that breathing is most efficient and comfortable and in which sleep is most easily secured. The good nurse uses pillows by a process of trial and error to secure these aims. It is impossible to lay down rules for every type of child and illness. Custom plays a part which leads to the second question. Usually a baby has a small pillow and most young children prefer a low pillow. But it is probably immaterial whether a child has one, two, or no pillows so long as sleep is calm and peaceful. Adults vary with their likes and dislikes as regards pillows, and with children it is the same. But the danger of mastoid infection from feeding young children in the recumbent position, and of allowing them to remain lying too long in one position, should be remembered (see article by Mr. P. W. Leathart in the *Journal* of August 7, p. 168).

Aschheim-Zondek Test

Q.—*What reliance can be placed on the Aschheim-Zondek test for pregnancy in the early stages—say after two weeks' amenorrhoea? Can a negative result at this stage be accepted as a definite proof of absence of pregnancy?*

A.—The Aschheim-Zondek test is to be regarded as a test for the presence of live and active chorionic tissue in contact with the maternal circulation rather than for pregnancy. As such it is accurate in 95 to 97% of cases, and there are more false negative than false positive reactions. In pregnancy the test usually becomes positive within one week of a period being missed, but this is by no means constant, and a negative reaction after two weeks'

amenorrhoea should not be accepted as definite proof of the absence of a live pregnancy. If clinical signs of pregnancy persist the test should be repeated after an interval of one week. All reactions, and particularly "doubtful" ones, require careful interpretation, bearing in mind the clinical features of each case.

Vitamin C Saturation Test

Q.—*Will you kindly inform me of the exact amount of ascorbic acid required to saturate the blood in order to do the urine ascorbic acid saturation test. Does the amount required vary with different age levels?*

A.—There is a "saturation test" in which ascorbic acid is estimated in the urine after the oral and parenteral administration of a test dose of ascorbic acid. Like glucose and some other compounds, ascorbic acid is a threshold substance, with a critical level of excretion at about 1.4 mg. per 100 c.cm. of blood plasma.

The rationale of the saturation test is based on the hypothesis that after the administration of ascorbic acid the requirements of the tissues for the vitamin are satisfied before the concentration of ascorbic acid in the blood rises to the threshold value and is eliminated in the urine. For practical purposes the method of Harris (*Lancet*, 1937, **2**, 1429) may be used. At 9 a.m. the individual empties the bladder and the specimen is rejected. Another specimen is obtained at 12 noon and titrated with 2:6-dichlorophenolindophenol solution for ascorbic acid; any urine passed during the three hours is also collected and titrated. This procedure is repeated on a second and third day. After this, for one or two further days, or more if necessary, a test dose of 70 mg. of ascorbic acid per stone of body weight is given orally in 100 c.cm. water at 10 a.m. and the urine collected on the same day between 2 and 4 p.m. or 5 p.m. This two or three hours' afternoon specimen reveals if there has been an increased excretion of ascorbic acid in response to the day's test dose. The test is repeated daily until a sharp rise in the urinary excretion of ascorbic acid is obtained: 25 to 50 mg. per stone of body weight shows a sharp rise in the urinary excretion of ascorbic acid on the first or second day of test dosing. With increasing deficiency there will be an increased number of days' delay before a response is obtained. The amount of the test dose depends on body weight rather than on age. It is 70 mg. per kilo of body weight. For further literature consult *Lancet*, 1940, 2, 259; 1942, **1**, 265, 642, 644, 647; and *British Medical Journal*, 1940, **2**, 217.

Injection of Fibrous Nodules

Q.—*What is the technique of injection of novocain or similar drug for relief of severe pain from fibrositic nodules in region of shoulder girdle? Can permanent relief be attained by this method? The condition is now subacute and the pain comes on in attacks.*

A.—Injection of fibrous nodules and indurated regions is regarded as extremely valuable in the treatment of fibrositis. The nodule is recognized by its tough consistency, and pain is felt on penetration. It is infiltrated with 5 to 15 c.cm. of a 1/2% solution of procaine in saline, which should be delivered in the centre of the nodule. Infiltration abolishes the pain, and if this does not happen it is probable that the nodule has not been properly located. To obtain the maximum benefit, injection should be followed immediately by massage and stretching of the affected muscles. Successful injection is usually followed by permanent relief of pain, but there may be recurrence as a result of incomplete disintegration of the nodule or the formation of new nodules. The injection should then be repeated. In assessing the results of physical treatment it should be remembered that there is an increasing tendency to incriminate psychogenic factors in cases of fibrositis which do not respond readily to treatment.

Painful Legs in Elderly Diabetic

Q.—*A woman aged 67, well in every way except that she has mild diabetes mellitus, controlled by 5 units of ordinary insulin a day—blood pressure 160/90—complains only of great pain in her legs on walking other than a little distance. X-ray examination shows the femoral and tibial arteries to be more or less continuously calcified, and the course of both arteries can be followed in the skiagrams down both legs by the calcification of the vessels. I have no doubt of the diagnosis but am at a loss for any treatment. I feel massage is contraindicated and have my doubts about using acetylcholine. I should be grateful for any help.*

A.—As the diabetes is controlled by such a small daily dose of insulin, it is improbable that the arteriosclerosis is diabetic in origin. It is presumably a senile degenerative lesion. The pain in the legs on walking is due to insufficient blood supply to the muscles. The only hope of improvement lies in attempts directed to increase the blood supply through arteries which are not calcified. For this purpose the patient should sit in a hot bath for half an hour daily. Massage to the legs twice a week has proved helpful in some cases. It would also be worth while trying the effect of giving by mouth nicotinic acid 50 mg. t.d.s. Acetylcholine is not likely to be helpful. If the patient is on a low-carbohydrate diet it would be well to increase the carbohydrate, and the insulin too if necessary, with the idea of preventing any diabetic arteriosclerotic changes from occurring.

China Root

Q.—*Dr. E. Ashworth Underwood, in his interesting article on the "Fabrica" of Vesalius, mentions the "China root" which Vesalius used in 1537 for treatment and made the subject of a "letter" in 1546. What was this root? "Chambers's Encyclopaedia" (about 1886) mentions the letter but does not explain its subject. The "Encyclopaedia Britannica," latest edition, has not even an article on Vesalius.*

A.—China root—*Radix chinae*—is supposed to be the root of *Smilax china* L., a native of Japan and Eastern Asia. *S. glabra* Roxb. and other varieties furnish similar roots. China root was used in the same way as sarsaparilla, which belongs to the same genus, *Smilax*. In the East it has a very ancient history. In Europe it was probably first mentioned by Valerius Cordus (1515-44), and its use as a remedy for syphilis was made known to the Portuguese by Chinese traders about 1535. The Emperor Charles V was reported to have been much relieved of his gout by its use, and this success prompted several works, the earliest of which is the *Epistola* of Vesalius. It continued to be used as a sudorific and alterative until the beginning of the eighteenth century, and even in the second half of the nineteenth century it was still to be found in some pharmacopoeias.

The *Letter* of Vesalius is important not because of the description of the therapeutic use of the root but on account of the valuable autobiographical notes which it contains.

Endocrine Factor in Migraine

Q.—*I have under my care a very severe case of migraine in a male aged 30, which has failed to respond to the ordinary analgesics, ergometrine, femergin (ergotamine tartrate), or the antuitrin S treatment. I would be grateful for any suggestions in the treatment of this case.*

Q.—*I should be grateful for information about the use of A.P.L. hormone in the treatment of obstinate migraine. The patient is a married woman aged 42, who has had the attacks for eight years at least. She has had a great deal of treatment from various consultants without avail. She has not had this hormone. She is temporarily relieved by femergin. The attacks are frequent and incapacitating, and seem to have no relation to menstruation.*

A.—In both these questions the use of gonadotrophic preparations is mentioned. The scanty available evidence indicates that migraine of endocrine origin is probably due to over-activity of the anterior pituitary. For instance, excess of gonadotrophin and deficiency of oestrogen have been found in the urine of women suffering from "menstrual migraine." Again, the timing of these attacks to the immediate premenstrual and menstrual phase of the cycle, when oestrogen secretion is low and gonadotrophic activity (especially of the follicle-stimulating type) is high, is suggestive. Furthermore, migraine sometimes appears for the first time at the menopause, when follicle-stimulating gonadotrophic activity is increased. Claims have been made for the relief of migraine by administration of either oestrogen or androgen, presumably by depressing pituitary gonadotrophic activity. Finally, administration of gonadotrophins has been found to aggravate the attacks and even to induce migraine in women showing a low oestrogen, high gonadotrophin urinary balance.

The possible aetiological factors, however, are many. Cases are reported as being associated with low B.M.R.s and signs of hypothyroidism. On the other hand the combination of Graves's disease and migraine in which both conditions were relieved by thyroidectomy is recorded. Dilatation of the cerebral or cranial vessels, which can be produced by histamine or counteracted by adrenaline or ergotamine tartrate, may be the cause in some cases. Some are allergic in nature and may be treated in accordance with the findings of skin tests. In other cases errors of refraction or nasal congestion may precipitate attacks.

Fuchsin Paint

Q.—*What is the composition of Castellani's fuchsin paint? What is its main use apart from epidermophytosis?*

A.—Castellani's fuchsin paint consists of: saturated alcohol solution of basic fuchsin, 10 c.cm.; 5% aqueous carbolic solution, 100 c.cm. Mix, filter, and add boric acid, 1 g. After two hours add 5 c.cm. acetone, and hake. Two hours later add resorcin, 10 g. Mix, and dispense in dark glass-stoppered bottle. This paint is often useful in mycotic infections affecting skin folds, such as between the toes and between the fingers, and although it has been used mainly in epidermophytosis it has proved useful in the extensive ringworms of tropical origin and in yeast infections also. It may be of service in chronic pyogenic intertrigo.

INCOME TAX

Successive Appointments

S. O. held three successive appointments during 1941-2 and joined the R.A.M.C. in Dec., 1942. He married in 1941-2 and his wife also had earned income in that and the following years. Various sums of tax have been deducted by the different employing authorities. What should he do to "clear up the muddle"?

*** The total tax payable for 1941-2 and 1942-3 is as follows:

1941-2.	Earnings of self				£326
Deduct.	Earned income allowance	£33			
	Expenses	£1			
	Personal allowance	£140			
				£174	
				£152	
	Tax at 6s. 6d. in the £	£49	8	0	
Deduct.	Life assurance relief (£12 at 3s. 6d.)	£2	2	0	
				£47	6 0

(The wife's income is less than the allowances due to her, and no tax is payable thereon.)

1942-3.	Civil earnings	£210			
	R.A.M.C. pay	£127			
				£337	
Deduct.	Earned income allowance	£33			
	Expenses (uniform allowance)	£10			
	Personal allowance	£140			
				£183	
				£154	
	Tax at 6s. 6d. in the £	£50	1	0	
Deduct.	Life assurance relief (£12 at 3s. 6d.)	£2	2	0	
				£47	19 0

The wife's liability is £217, less £80 (special earned income allowance) and £22 (ordinary earned income allowance)—i.e., £115, of which (£165−£154=) £11 is chargeable at 6s. 6d. and the balance of £104 at 10s. in the £; her total liability is therefore £3 11s. 6d. plus £52=£53 11s. 6d.

As S. O. will make his future returns to the War Office, his best course will be to deal with the branch of the Inland Revenue Department which handles that side of income-tax work, and communications should be sent to the Chief Inspector of Taxes, the Hydro, Llandudno, North Wales. We suggest that S. O. send a statement of his liability on some such lines as are indicated above to that office, together with a statement setting out what deductions of tax have been made—so far as can be stated—and ask for the whole position to be cleared up and a statement supplied showing the adjustments which have been made to rectify the original charges.

Subscriptions to B.M.A. and Medical Defence Union

"ASSISTANT" inquires whether these are allowable.

*** An assistant is in employment and is therefore assessable under Schedule E. The rule accordingly is that such subscriptions can be regarded as allowable expenses only when membership of the organizations, etc., to which they are paid is a condition in the terms of service of the appointment he holds.

LETTERS, NOTES, ETC.

Perforated Gastric Ulcer in Adolescent

Dr. M. AUDERIAH CONYNGHAM (Monkstown, Co. Dublin) writes: Dr. David Kyle, reporting a case of a perforated gastric ulcer in a boy of 19 (March 20, p. 370), expressed an interest in any similar records. While I was house-surgeon at the Staffordshire General Infirmary, Stafford, a collier aged 17 was admitted on Sept. 25, 1941, as an acute abdomen with a short history of abdominal pain, having previously enjoyed good health. In this case, with a pre-operative diagnosis of a perforated gastric ulcer and the kind permission and help of Mr. Roy Sworn, I performed the repair of a small acute perforated ulcer on the anterior aspect of the stomach, close to the pylorus. This was quite accessible and easily repaired. The boy made an uneventful recovery.

Continuing Research on Cancer

Surg. Lieut. EDWARD F. HUNT, R.N.V.R., writes: With reference to the editorial article on continuing research on cancer (Jan. 16, p. 79), reviewing the work of the British Empire Cancer Campaign, I was extremely interested in the experiments on the breast-feeding of cancerous strains of mice. However, one is left with the feeling that the research workers on this line of investigation have been persuaded that there must be a positive carcinogen present in the high-breast-cancer strain of mice. Personally I do not believe the experiment was carried far enough. In my opinion (as put forward in previous letters to the *Journal*) one of the main factors in the formation of cancerous growths is a negative or minus factor. In other words, in a great proportion of cancers the deciding factor is a deficiency of cancer-preventing substance. Now, if in these mouse experiments it had been possible for two further groups of mice to have been suckled alternately day by day, first by the high-breast-cancer mother and then by the low-breast-cancer mother, it might have been found that all the babies lived to be low-breast-cancer mice. If this result occurred I feel that it might prove the milk of the low-breast-cancer mice contained an anti-cancer factor, and, vice versa, the high-breast-cancer mice were hereditarily deficient in this substance. If, on the other hand, a greater percentage of the babies produced cancer, then perhaps it could be maintained that a definite positive cancer-producing substance is present in high-breast-cancer mice. I believe this last to be quite unlikely. The Glasgow Cancer Research tends to show how vitamin deficiency can produce cancer. My own theory is based on the hyperplasia of the bone marrow in pernicious anaemia patients, which, as everyone now knows, is a deficiency disease.

Treatment of Chilblains

Dr. W. N. GIBBS (West Bromwich) writes: I have found the following mixture a most satisfactory prophylactic in the treatment of chilblains: pot. bicarb. gr. 15, sod. sulphat. gr. 10, ext. colchici liq. ♏ 5, aq. menth. pip. ad 1/2 oz. The mixture should be taken every 4 hours on the first appearance of the chilblains, or at the onset of frosty weather. It will be found that the lesions gradually subside and disappear in 5 to 9 days. The treatment can then be discontinued, but should be restarted on the first sign of any tingling or swelling which indicates the onset of another crop of chilblains. I cannot give any explanation of why this treatment should be so efficacious, but possibly there is a chemical similarity between ext. colchici liq. and nicotinic acid. The latter, I understand, facilitates the action of vitamins A and D.

A Shorter Perineorrhaphy Needle

Dr. M. H. ELLIOTT writes: Would it be correct to suggest that while the perineorrhaphy needle is not a popular instrument after our student days, it is not either a particularly efficient one; and that this may be due to the fact that the long and unwieldy handle is awkward? The suggestion is that a decrease in the length of the flat-bladed portion and also of the tubular portion by half of the handle would render it more easily used. While parturition is well tolerated, in some cases stitching is an extra burden, and it is true that the doctor is often called for this alone, with or without anaesthesia administration. The junction of the straight and curved portions should make for an efficient instrument.

Improvised Wheeled Stretchers

Major S. T. BEGGS, R.A.M.C. (ret.), writes: In reference to the notes on a wheeled stretcher in the *Journals* of May 1 (p. 542) and June 12 (p. 746), at the beginning of the war I improvised wheeled stretchers by using discarded pram wheels with the springs attached and fixing a boarded shelving by means of bolts and nuts to the ends of the springs. Straps are bolted to the boards to secure the regulation stretcher. The stretcher is released if and when required by undoing the straps. This contrivance will be found quite serviceable.

Sterility and Contraception

Mrs. MARIE C. STOPES, D.Sc., writes: In your issue of June 19 Mr. V. B. Green-Armytage says it is "remarkable that the president of the Family Planning Association should advocate the study of sterility in clinics hitherto used for birth control." The only remarkable thing in that is that they have taken so many years to imitate what I originated when I founded the first birth control clinic. I announced this in the great Queen's Hall meeting in 1921, and it has been the consistent policy of the mothers' clinics ever since that the true control of conception is that which prevents undesirable births, spaces (so that the mother can breast-feed) desirable births, and induces desired births where sterility has previously been undesired. From 1921 assistance in undesired sterility has been a feature in all my mothers' clinics.

Treatment of Whooping-cough

Dr. G. ARBOUR STEPHENS (Swansea) writes: In connexion with Dr. Richard Baker's article on whooping-cough (May 8, p. 562), I enclose a copy of an article I wrote about 40 years ago on the same subject, and as the treatment therein recommended was attended by very good results some readers may care to give it a trial. In nearly all cases one finds that the auditory meatus is hypersensitive owing to some irritation of the auditory branch of the vagus nerve. By applying a 5 to 10% solution of cocaine in glycerin and water once or twice a day to the drums and meati one is able to reduce the sensitiveness of that branch and at the same time reduce the effects of any irritation on the ends of that branch. This treatment is sometimes a relief in asthma, a disease wherein the hypersensitiveness of the drums and meati is particularly marked.

A Correction

We are asked to state that "Anaesthesin" is the trade mark of Bayer Products Limited for their brand of benzocaine. It was wrongly described as "pulv. anaesthesin (May & Baker)" in our issue of July 31 (p. 148), in the letter signed "Medical."